Exhibit #1:

Letter from Morgan

Morgan Matroc, Inc
Electro Ceramics Division

232 Forbes Road
Bedford Ohio 44146 USA
Telephone (216) 232 8600
FAX (216) 232 8731

MATROC
Leaders in ceramic technology

August 15, 1995

Ohio Environmental Protection Agency
2110 E. Aurora Rd.
Twinsburg, Ohio 44087-1969

Re: Initial Notification - Vapor Degreasers

Gentlemen:

We wish to report the existence and operation of the following vapor degreasers at Morgan Matroc, Inc., Electro Ceramics Division, 232 Forbes Rd., Bedford, OH 44146:

Location	Shapes Dept.	Elements Dept. Waxing	Elements Dept. Cleaning
Type	Batch Vapor	Batch Vapor	Batch Vapor
Manufacture	Minuteman	Baron Blakeslee	Baron Blakeslee
Surface Area-sq. ft.	8	2.8	2.2
Enclosure	Slide Cover	Top Cover	Top Cover
Ventilation	Chilled Air Curtain	Hood Exhaust	Hood Exhaust
Installation Date	1984	1959	1992
Coolant	Chilled Water	Chilled Water	Chilled Water

Should you require any additional information, please contact me at 216-232-8600, ext. 278.

Sincerely,

William J. Hocevar, P.E.
Facility Manager

Exhibit #2:

1st Letter of Warning

CERTIFIED MAIL
P 248 784 776

1st Warning Letter

September 29, 1995

RE: Requirements of Ohio Administrative Code (OAC) Rule 3745-78 ("Air Pollution Control Fees"). 13-18-03-1627

James Mousseau
Morgan Motroc Vernitron Div.
232 Forbes Rd.
Bedford, OH 44146 5478

Dear Mr. Mousseau:

Earlier in 1994 we sent you information concerning the new Title V Air Pollution Emission Fee program. In addition, we asked you to send us a report on your emissions annually with the first report due by July 15, 1994, and by April 15, each year thereafter. As of 09/29/95, we have not received your TRI report.

According to our records, your facility is subject to Title V requirements because, as of December 31, 1993, it had the potential to emit in excess of one or more of the following levels:

Sulfur Dioxide	100 Tons
Nitrogen Oxides	100 Tons
Carbon Monoxide	100 Tons
Lead	100 Tons
Particulate	100 Tons
Organic Compounds	100 Tons
Any one hazardous air pollutant listed in Section 112(b) of the Clean Air Act.	10 Tons
Combination of all hazardous air pollutants listed in Section 112(b) of the Clean Air Act.	25 Tons

2nd page ?
from

Exhibit #3:

Fax from CLAA

City of Cleveland

MICHAEL R. WHITE, MAYOR

DEPARTMENT OF PUBLIC HEALTH

DIRECTOR

, COMMISSIONER
DIVISION OF HEALTH

ROBERT STAIB, COMMISSIONER
DIVISION OF ENVIRONMENT

Division of Health
(216) 664-2324

Division of the Environment
(216) 664-2300

1925 St. Clair Avenue
Cleveland, Ohio 44114
(216) 664-2324 Fax: (216) 664-2197

fax & mail

AIR POLLUTION CONTROL
FAX 216-664-4879

FACSIMILE TRANSMISSION COVER SHEET

DATE: October 10, 1995 TIME: 3:53PM Page 1 of 6

ATTENTION: Mr. Bill Hocevar, Facility Manager

COMPANY: Morgan Matroc Vernitron Div.

RECEIVING TELECOPIER'S AREA CODE 216 NUMBER 232-8731

SUBJECT: Sept. 29, 1995 letter & air pollution control fee

MESSAGES: Enclosed herein are applicability questionnaire and air fee emission report forms you had requested during our telephone conversation on October 10, 1995. You may photo copy these forms, as needed. There is additional information on the BBS run by Ohio EPA, DAPC at 614-644-3901.

If you have any question regarding this matter, please call me at 216-664-2148

Thank you.

Sent by: A. L. Ang Phone No. 216-664-2148
Division of Environment, Bureau of Air Pollution Control

PLEASE CALL IMMEDIATELY IF TRANSMISSION IS INCOMPLETE.

cc: E. J. Fasko

✓File Ohio EPA 13-18- 03-1627 General File

AUG95

An Equal Opportunity Employer

Exhibit #4:

Fax from Morgan

Morgan Matroc, In.
Electro Ceramics Division
232 Forbes Road
Bedford Ohio 44146 USA
Telephone (216) 232 8600
FAX (216) 232 8731

MATROC
Leaders in ceramic technology

TELEFAX TO THE FOLLOWING NUMBER: 664- 4879

PLEASE DELIVER THE FOLLOWING PAGES TO:

NAME OF INDIVIDUAL E.J. FASKO / A. L. ANG

COMPANY NAME AIR POLLUTION CONTROL

FROM: BILL HOCHMAN DATE: 10-13-95

TOTAL NUMBER OF PAGES (INCLUDING COVER PAGE) 3

COMMENTS:

ATTACHED IS OUR TITLE V APPLICABILITY QUESTIONNAIRE FOR 1994. SHOULD YOU REQUIRE EMISSION DOCUMENTATION WE RESPECTFULLY REQUEST A 60 DAY EXTENSION IN ORDER TO RETAIN THE SERVICES OF AN ENVIRONMENTAL ENGINEER TO ASSIST IN THE DOCUMENTATION PHASE. PLEASE ADVISE US OF YOUR REQUIREMENTS. MY NUMBER IS 232-8600, X 278.

IF YOU DO NOT RECEIVE ALL THE INFORMATION, PLEASE ADVISE IMMEDIATELY SO WE CAN RESEND.

THANK YOU.

Morgan P.1

OCT 13 '95 03:49PM MORGAN MATROC INC
2162328731

Title V Applicability Questionnaire

e purpose of this questionnaire is to establish whether
ur facility at this time would be subject to the Title V
rmitting provisions as described in Ohio Administrative
de (OAC) Chapter 3745-77. This is necessary to determine
ether your facility will be required to pay an emission
e of $17.58/ton [$15/ton fee adjusted for inflation from
e Consumer Price Index utilizing 1989 as the base year]
r the estimated July 1 through December 31 actual
issions. This fee is required by the Ohio Revised Code
RC) Section 3745.11(C).

your company is without the services of an
gineer, you may want to consider hiring the services of an
ir pollution control consultant to assist with the
mpletion of this questionnaire. It is extremely important
accurately complete this questionnaire to establish your
ompany's Title V permitting obligations, if any.

. Does your facility have the "potential to emit" 100 tons or more of:

i) sulfur dioxide (SO2)? yes or (no)
i) nitrogen oxides (NOx)? yes or (no)
i) carbon monoxide (CO)? yes or (no)
v) lead (Pb)? yes or (no)
v) particulate matter (PM)? yes or (no)
i) organic compounds (OC)? yes or (no)

y have answered "yes" to one or more of the questions answered
ve, your facility will be subject to the Title V requirements
vided in OAC Chapter 3745-77 and you must complete the fee
issions report for your facility. If you answered "no" to all the
estions asked in paragraph A, please go to paragraph B of this form.

B. Does your facility have the potential to emit 10 tons or more of any one of the hazardous air pollutants listed under Section 112(b) of the Clean Air Act? yes or (no)

If "no," does your facility have the potential to emit 25 tons or more for all of the hazardous air pollutants? yes or (no)

your answer is "yes" to either of the above questions, the facility
questions is subject to Title V and Emission Fee requirements
ecified in Ohio Administrative Code (OAC) rules 3745-77 and 3745-78,
spectively. Moreover, the facility must complete and submit an
ission fee report for the emission units at the facility.

you answered "no" to all questions in paragraphs A and B, the
acility is not currently a Title V facility and you must proceed to
aragraph C for future billing requirements for non-Title V
acilities.

C. Does your facility have a SUM of actual emissions of PM, SO2, NOx, OC, and Pb of:

(i) 100 tons or greater? yes or (no)

Exhibit #5:

Request
To
Withdraw Title V
From
Morgan

Morgan Matroc, Inc.
Electro Ceramics Division

232 Forbes Road
Bedford Ohio 44146 USA
Telephone (216) 232 8600
FAX (216) 232 8731

MATROC
Leaders in ceramic technology

February 6, 1998

Mr. Ed Fasko
Chief Air Quality Engineer
Cleveland Air Pollution Control
1925 St. Clair Avenue
Cleveland, OH 44114

SUBJECT: Request for withdrawal of electronically submitted Title V Permit Application (Control No. 000003531) and designation of facility to non-Title V status for the Morgan Matroc, Inc., Bedford, Ohio facility

Dear Mr. Fasko:

On Friday, September 27, 1996, Morgan Matroc, Inc. electronically submitted a Title V Application (Control No. 000003531) for their Bedford, Ohio facility (Facility I.D. No. 13-18-03-1627). This submission was intended to serve as a complete facility Permit to Operate application requesting federally enforceable limitations on the facility's perchloroethylene usage. During the permit review process and subsequent requests for additional information from the state, Morgan Matroc, Inc. became aware of the fact that facility perchloroethylene usage had been reduced to the point that actual and potential emissions of perchloroethylene were below the applicable thresholds, therefore nullifying the requirement for a federally enforceable facility state operating permit.

Based on this information, Morgan Matroc, Inc. respectfully requests that this application submittal (Control No. 000003531) be removed from the STARShip database and all paperwork related to this application be returned to the following address:

Attn: William Hocevar
Morgan Matroc, Inc.
Electro Ceramics Division
232 Forbes Road
Bedford, Ohio 44146

The Title V Permit applicability statement for this facility was based on production during the 1995 calendar year. At this time, the recordkeeping and documentation of perchloroethylene usage was not sufficient to conduct a thorough materials balance. Available records indicated the facility had actual annual emissions of 9.42 tpy (based upon 5,880 operating hours) and a potential to emit of 14.03 tpy (based upon 8,760 operating hours) of an individual hazardous air pollutant (perchloroethylene). The facility potential to emit for Total HAPs was well below the 25 tpy threshold (17.8 tpy).

RECEIVED
FEB 09 1998
DIVISION OF
AIR POLLUTION CONTROL

Morgan

Based upon these results it was decided to submit a facility permit with federally enforceable limitations on perchloroethylene usage.

A revised permit to operate (PTO) was submitted to Cleveland Air Pollution Control Agency in February 1996 for Ohio EPA Source P019. The existing vapor degreaser was equipped with a new: (1) freeboard chiller, (2) refrigeration system, and (3) automatic cover. Additionally, improved operating and work practice standards for the vapor degreaser using perchloroethylene were implemented.

The engineering and operational changes resulted in actual annual emissions of 4.6 tpy and a potential to emit of 6.80 tpy of perchloroethylene for 1996 and an actual annual emissions of 4.9 tpy and a potential to emit of 7.3 tpy of perchloroethylene for 1997 (based upon 5,880 actual operating hours for both calendar years). (Please see attached tables for a summary of the 1996 and 1997 total facility actual and potential emissions calculations).

Based upon the reduction in actual and potential perchloroethylene usage at the facility, Morgan Matroc, Inc. believes that they are not at this time subject to the requirements of the Title V permitting program. (Please see attached Title V Applicability Questionnaire). Please advise Mr. William Hocevar if any further level of documentation is required.

Please forward this document to the appropriate personnel at the state level for due attention. Thank you for your consideration in this matter. If you have any questions regarding this correspondence, please contact Mr. William Hocevar at (216) 232-8600.

Sincerely,

Ronald Roch
President
Morgan Matroc, Inc.

cc: W. Hocevar
D. Mehls

Attachments

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Facility Ohio EPA I.D. 13-18-03-1627
1996 Facility Emissions Summary Table

Ohio EPA Permit No.	Company Source I.D.	PTE Quantitative Method	Facility Potential Emissions					Facility Actual Emissions				
			VOC (tpy)	PM (tpy)	Pb (tpy)	Perc. (tpy)	Total HAP (tpy)	VOC (tpy)	PM (tpy)	Pb (tpy)	Perc. (tpy)	Total HAP (tpy)
P001	VPD-32	TD	N/A	1.06	0.13	N/A	0.13	N/A	0.87	0.11	N/A	0.11
P004	VPD-1	MB	4.38	N/A	N/A	N/A	N/A	0.03	N/A	N/A	N/A	N/A
P005	VPD-18	MB	2.85	N/A	N/A	N/A	N/A	0.13	N/A	N/A	N/A	N/A
P006	VPD-3	MB	0.63	0.18	N/A	N/A	N/A	0.06	0.02	N/A	N/A	N/A
P007	VPD-4	TD	N/A	0.08	N/A	N/A	N/A	N/A	0.01	N/A	N/A	N/A
P008	VPD-5	TD	N/A	0.07	N/A	N/A	N/A	N/A	0.01	N/A	N/A	N/A
P009	VPD-6	TD/MB	6.14	0.43	N/A	N/A	N/A	1.40	0.10	N/A	N/A	N/A
P010	VPD-9	MB	15.33	N/A	N/A	N/A	N/A	0.02	N/A	N/A	N/A	N/A
P011	VPD-10	MB	17.52	4.38	N/A	N/A	N/A	0.64	0.16	N/A	N/A	N/A
P013	VPD-11	TD	N/A	0.15	0.08	N/A	0.08	N/A	0.07	0.03	N/A	0.03
P014	VPD-14	MB	N/A	1.58	0.95	N/A	0.95	N/A	0.02	0.01	N/A	0.01
P015	VPD-2	MB	0.63	0.18	N/A	N/A	N/A	0.06	0.02	N/A	N/A	N/A
P016	VPD-21	MB	4.38	2.85	2.63	N/A	2.63	0.25	0.16	0.15	N/A	0.15
P017	VPD-22	MB	1.80	0.57	N/A	N/A	N/A	0.41	0.13	N/A	N/A	N/A
P018	VPD-23	MB	1.31	0.44	N/A	N/A	N/A	0.30	0.10	N/A	N/A	N/A
P019	VPD-24	MB	6.80	N/A	N/A	6.80	6.80	4.56	N/A	N/A	4.56	4.56
P020	VPD-26	MB	4.79	4.38	N/A	N/A	N/A	1.37	1.25	N/A	N/A	N/A
P021	VPD-33	AP-42	N/A	0.05	N/A	N/A	N/A	N/A	0.03	N/A	N/A	N/A
FACILITY TOTALS (tpy)			66.56	16.39	3.78	6.80	10.58	9.22	2.94	0.30	4.56	4.87

Abbreviations:

PTE: potential to emit
VOC: volatile organic compound
PM: particulate matter
Pb: lead
HAP: hazardous air pollutant

MB: Material Balance
TD: Stack Test Data
AP-42: AP-42 emission factor
tpy: tons per year

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Facility Ohio EPA I.D. 13-18-03-1627
1996 Facility Emissions Summary Table

Ohio EPA Permit No.	Company Source I.D.	PTE Quantitative Method	Facility Potential Emissions					Facility Actual Emissions				
			VOC (tpy)	PM (tpy)	Pb (tpy)	Perc. (tpy)	Total HAP (tpy)	VOC (tpy)	PM (tpy)	Pb (tpy)	Perc. (tpy)	Total HAP (tpy)
P001	VPD-32	TD	N/A	1.06	0.13	N/A	0.13	N/A	0.87	0.11	N/A	0.11
P004	VPD-1	MB	4.38	N/A	N/A	N/A	N/A	0.03	N/A	N/A	N/A	N/A
P005	VPD-18	MB	2.85	N/A	N/A	N/A	N/A	0.13	N/A	N/A	N/A	N/A
P006	VPD-3	MB	0.63	0.18	N/A	N/A	N/A	0.06	0.02	N/A	N/A	N/A
P007	VPD-4	TD	N/A	0.08	N/A	N/A	N/A	N/A	0.01	N/A	N/A	N/A
P008	VPD-5	TD	N/A	0.07	N/A	N/A	N/A	N/A	0.01	N/A	N/A	N/A
P009	VPD-6	TD/MB	6.14	0.43	N/A	N/A	N/A	1.40	0.10	N/A	N/A	N/A
P010	VPD-9	MB	15.33	N/A	N/A	N/A	N/A	0.02	N/A	N/A	N/A	N/A
P011	VPD-10	MB	17.52	4.38	N/A	N/A	N/A	0.64	0.16	N/A	N/A	N/A
P013	VPD-11	TD	N/A	0.15	0.08	N/A	0.08	N/A	0.07	0.03	N/A	0.03
P014	VPD-14	MB	N/A	1.58	0.95	N/A	0.95	N/A	0.02	0.01	N/A	0.01
P015	VPD-2	MB	0.63	0.18	N/A	N/A	N/A	0.06	0.02	N/A	N/A	N/A
P016	VPD-21	MB	4.38	2.85	2.63	N/A	2.63	0.25	0.16	0.15	N/A	0.15
P017	VPD-22	MB	1.80	0.57	N/A	N/A	N/A	0.41	0.13	N/A	N/A	N/A
P018	VPD-23	MB	1.31	0.44	N/A	N/A	N/A	0.30	0.10	N/A	N/A	N/A
P019	VPD-24	MB	7.30	N/A	N/A	7.30	7.30	4.90	N/A	N/A	4.90	4.90
P020	VPD-26	MB	4.79	4.38	N/A	N/A	N/A	1.37	1.25	N/A	N/A	N/A
P021	VPD-33	AP-42	N/A	0.05	N/A	N/A	N/A	N/A	0.03	N/A	N/A	N/A
FACILITY TOTALS (tpy)			**67.06**	**16.39**	**3.78**	**7.30**	**11.08**	**9.56**	**2.94**	**0.30**	**4.90**	**5.20**

Abbreviations:

PTE: potential to emit
VOC: volatile organic compound
PM: particulate matter
Pb: lead
HAP: hazardous air pollutant

MB: Material Balance
TD: Stack Test Data
AP-42: AP-42 emission factor
tpy: tons per year

Title V Applicability Questionnaire

The purpose of this questionnaire is to establish whether your facility at this time would be subject to the Title V permitting provisions as described in Ohio Administrative Code (OAC) Chapter 3745-77. This is necessary to determine whether your facility will be required to pay an emission fee of $17.58/ton [$15/ton fee adjusted for inflation from the Consumer Index utilizing 1989 as the base year] for the estimated July 1 through December 31 actual emissions. This fee is required by the Ohio Revised Code (ORC) Section 3745.11(C).

If your company is without the services of an environmental engineer, you may want to consider hiring the services of an air pollution control consultant to assist with the completion of this questionnaire. It is extremely important to accurately complete this questionnaire to establish your company's Title V permitting obligations, if any.

A. Does your facility have the "potential to emit" 100 tons or more of:

(1)	sulfur dioxide (SO_2)?	[ ] Yes, [X] No
(2)	nitrogen oxides (NO_x)?	[ ] Yes, [X] No
(3)	carbon monoxide (CO)?	[ ] Yes, [X] No
(4)	lead (Pb)?	[ ] Yes, [X] No
(5)	particulate matter (PM)?	[ ] Yes, [X] No
(6)	organic compounds (OC)?	[ ] Yes, [X] No

If you have answered "yes" to one or more of the questions answered above, your facility will be subject to the Title V requirements provided in OAC Chapter 3745-77 and you must complete the fee emissions report for your facility. If you answered "no" to all the questions asked in paragraph A, please go to paragraph B of this form to answer additional questions.

B. Does your facility have the potential to emit 10 tons or more of any one of the hazardous air pollutants listed under Section 112(b) of the Clean Air Act? [ ] Yes, [X] No.

If "no," does your facility have the potential to emit 25 tons or more of all of the hazardous air pollutants? [ ] Yes, [X] No.

If you answered is "yes" to either of the above questions, the facility in question is subject to Title V and Emission Fee requirements specified in Ohio Administrative Code (OAC) rules 3745-77 and 3745-78, respectively. Moreover, the facility must complete and submit an emission fee report for the emission units at the facility.

If you answered "no" to all questions in paragraphs A and B, the facility is not currently a Title V facility and you must proceed to paragraph C for future billing requirements for non-Title V facilities.

C. Does your facility have a SUM of actual emissions of PM, SO_2, NO_x, OC, and Pb of:

(i)	100 tons or greater?	[ ] Yes, [ ] No
(ii)	50 tons but less than 100 tons?	[ ] Yes, [ ] No
(iii)	less than 50 tons?	[X] Yes, [ ] No

If you were requested to complete (C), the facility will not be subject to Title V permitting and emissions fee reporting requirements but it is subject to a non-Title V facility annual emission fee in accordance with ORC section 3745.11(D) collected every 2 years beginning April 15, 1996. For more information, please refer to OAC rule 3745-78-02 (C), (D), and (E).

WILLIAM J. HOCEVAR — Signature — 2-6-98 Date

Print Name of person completing questionnaire

Title: FACILITY MGR.

Phone number: (440) - 232-8600

Facility: MORGAN MATROC, INC., ELECTRO CERAMICS DIV.

Facility ID: 13-18-03-1627

Exhibit #6:

Letter from CLAA

City of Cleveland
Michael R. White, Mayor

Department of Public Health
Division of the Environment
1925 St. Clair Avenue
Cleveland, Ohio 44114-2080
216/664-2300

February 18, 1998

Attn: William Hocevar
Morgan Matroc, Inc.
Electro Ceramics Division
232 Forbes Road
Bedford, Ohio 44146

re: February 6, 1998 letter to Cleveland APC regarding Morgan Matroc's Title V and FESOP applicability

Dear Mr. Hocevar:

Based on the information submitted to us regarding your emissions and your Title V/ FESOP applicability, we are taking the necessary steps to withdraw your application from our system. A copy of the information has been forwarded to Columbus (OEPA) for their review and records. The appropriate personnel in Columbus will then withdraw the information from the system.

You will be required to submit State Permit To Operate (PTO) applications. A blank copy of a PTO application and an EAC form is enclosed. Please make the necessary copies to complete for your emissions units. If you should have any questions regarding this matter please feel free to contact me at 216-664-4258.

Sincerely,

Jane M. Bell

Jane M. Bell
APC Engineer

cc: OEPA file #13-18-03-1627
L. Ours
M. VanMatre

Enclosure

EXHIBIT 6A

Letters of Warning and PTO application for L001

September 3, 1998

SERVING OHIO EPA
AS AGENCY 13 FOR
CUYAHOGA COUNTY

CERTIFIED MAIL Z 106 472 715

William Hocevar
Morgan Matroc Electro Ceramics Div.
232 Forbes Road
Bedford, Ohio 44146

RE: State PTI/PTO application

Dear Mr. Hocevar:

Enclosed are the following application(s)/form(s) checked below. Please complete the information and return to our office. Operation of an emissions unit without filing for applications for a permit to operate, variance to operate is prohibited by the Ohio Administrative Code (OAC) rule 3745-35-02 and section 3704.05 of the Ohio Revised Code. The sources in question are:

[ ] State PTI Application.
[x] State PTO Application.
[ ] Emission activity catagory form.
[ ] City of Cleveland PTI/PTO application.

Please respond within fourteen days of receipt of this letter with the completed applications. If you have any further questions about this matter please contact the engineer assigned to your facility or the permit processing section of the agency at 664-2324.

Eric Myles
Commissioner of Environment

Enclosure(s)

cc: OEPA file

BAPC1c.frm

E31

City of Cleveland
Michael R. White, Mayor

Department of Public Health
Division of the Environment
1925 St. Clair Avenue
Cleveland, Ohio 44114-2080
216/664-2300

October 20, 1998

SERVING OHIO EPA AS AGENCY 13
FOR CUYAHOGA COUNTY

William Hocevar

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Morgan Matroc Electro Ceramics Div.
232 Forbes Road
Bedford, Ohio 44146

Subject: L001

Dear Mr. Hocevar:

On 11/18/97, this agency sent you a Permit-to-Operate application for the above named source. As of this date, the requested information has not been received by this agency.

This is to notify you that the requested information must be received by this agency no later than seven (7) days after you recieve this letter. Operation of an emmission unit without filing for a permit to operate, variance to operate is prohibited by Ohio Adminstrative Code (OAC) rule 3745-35-02 and section 3704.05 of the Ohio Revised Code.

I strongly urge you to immediately submit the necessary information to this agency so that we may complete the processing of your application. Otherwise, your inaction may result in the referral of your file to the OEPA for possible enforcement action.

This notice is being issued in concurrence with the OEPA and does not excuse any violation of local, state and federal laws regarding air pollution control.

Should you have any questions is this matter, please contact the undersigned at 664-2300.

Sincerely,

Eric Myles

Eric Myles
Commissioner of the Environment

cc: File

Morgan Matroc, Inc.
Electro Ceramics Division

232 Forbes Road
Bedford Ohio 44146 USA
Telephone (216) 232 8600
FAX (216) 232 8731

1121 11/23/98 PTI/PTO

MATROC
Leaders in ceramic technology

November 18, 1998

CERTIFIED MAIL

Ms. Jane Bell
Air Quality Engineer
Cleveland Air Pollution Control
1925 St. Clair Avenue
Cleveland, OH 44114

SUBJECT: Ohio PTI application No. 13-3371 (Ohio EPA Source L001) and PTO application for Morgan Matroc, Inc. Bedford, Ohio facility

Dear Ms. Bell:

At your request, Morgan Matroc, Inc. is re-submitting Ohio PTI application No. 13-3371 (Ohio EPA Source No. L001). This PTI was originally submitted to your office on November 7, 1997. A draft PTI was issued in July 1998 and a final PTI was issued October 7, 1998. At the recommendation of the Cleveland Air Pollution Control Agency (CAPC), Morgan Matroc, Inc. submitted a letter to CAPC requesting an amendment to the Terms and Conditions of the PTI. This request for modification was submitted to CAPC on October 21, 1998.

The aforementioned request for modification to the PTI Terms and Conditions desired to comply with the requirements of 40 CFR 63, Subpart T by the use of the alternate standard as described in 40 CFR 63.464. This method of compliance is requested in lieu of the equipment and testing compliance method proscribed in the October 7, 1998 PTI Terms and Conditions. Upon review of the modification request, CAPC recommended that Morgan Matroc, Inc. re-submit PTI application No. 13-3371. The PTI application that is being re-submitted remains unchanged from the original November 7, 1997 submittal.

Additionally, per your request Morgan Matroc, Inc. respectfully submits a complete PTO application for the source described in the PTI application No. 13-3371 (Ohio EPA source No. L001.)

Thank you for your time and consideration in this matter. If you have any questions regarding this correspondence, please contact Matt Kupcak of Temco Associates Corporation, at (330) 935-3000 or (330) 352-5823.

Sincerely,

William J. Hocevar
Morgan Matroc, Inc.

RECEIVED
NOV 20 1998
DIVISION OF
AIR POLLUTION CONTROL

cc: Matt Kupcak, Temco

Morgan

633

FOR OHIO EPA USE ONLY:
DATE APPLICATION RECEIVED: _____
FACILITY ID: _____
EMISSIONS UNIT(s) ID(s): _____

OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) APPLICATION FOR STATE PERMIT(S) TO OPERATE AN EMISSIONS UNIT(S)

(Do not complete application without reading instructions.)

1. Facility Information: N 41. ~~37 20~~ 22.37 W 81. ~~04 48~~ 31.01

a. Applicant Name: *Morgan Matroc, Inc.*

b. Facility Name: *Electro Ceramics Division – Bedford Facility*

c. Facility Location:

Street: *232 Forbes Road*

City/Village/Township: *Bedford*

County: *Cuyahoga* Zip Code: *44146-5476*

d. Primary Facility Contact Name: *William Hocevar*

e. Primary Facility Contact Mailing Address/Phone Number:

Street: *Same*

City/Village/Township: _____

State: _____ Zip Code: _____

Phone Number: *(440) 232-8600*

f. OEPA Facility Identification (ID) Number (10-digit number):

1318031627

g. Facility Primary Standard Industrial Classification (SIC) Code Number (4-digit number): *3999*

h. Authorized Individual Signature:

I, being the individual specified in Ohio Administrative Code (OAC) rule 3745-35-02(B), hereby apply for Permit(s) to Operate (PTO) the emissions unit(s) described herein.

Peter Morten

Authorized Individual's Name (Please type or print)

RECEIVED 11/18/98

Authorized Individual's Signature NOV 20 1998 Date Signed

DIVISION OF AIR POLLUTION CONTROL

President

Title

E34

FOR OHIO EPA USE ONLY:
DATE APPLICATION RECEIVED: _____
FACILITY ID: _____
EMISSIONS UNIT(s) ID(s): _____

Operation of an emissions unit without an effective permit to operate, variance to operate, or registration status is prohibited by OAC rule 3745-35-02 and Section 3704.05 of the Ohio Revised Code.

i. Identification of Emissions Unit(s) at Facility (Identify the following information for each emissions unit(s) for which this application is being completed. List each emissions unit on a separate line. Mark "NE" (not established) if no OEPA ID (Identification) has been assigned to an emissions unit):

NOTE: Do not list emissions units that have been registered by the Ohio EPA in accordance with OAC rule 3745-35-05(B).

4-Digit OEPA ID	Company ID for Emissions Unit
L001	*Blakeslee Degreaser MLR-280*

(If additional entries for emissions units are needed, copy this page and attach the additional page(s) with additional emissions units entered and indicate below.) Check here if additional copies of this page are attached: _____

2. Emissions Unit Information (make a copy of pages 3-6 and attach for each emissions unit listed on page 2):

a. OEPA Emissions Unit ID (4-digit) number: *L001*

b. Company ID for Emissions Unit: *Blakeslee Degreaser MLR-280*

c. Emissions Unit Activity Description: *Open top vapor degreaser used to remove mineral oil and grease from ceramic disks and rings ½" to 2" in diameter. The degreaser uses perchloroethylene as a degreasing solvent.*

E35

FOR OHIO EPA USE ONLY:
DATE APPLICATION RECEIVED: _____
FACILITY ID: _____
EMISSIONS UNIT(s) ID(s): _____

d. Equipment Description: *24" x 16" Baron-Blakeslee Immersion Spray Degreaser – Model MLR-280LE equipped with: glide cover, 1.125 freeboard ratio, air-cooled low temp (-10°F) freeboard condensing unit, safety vapor control, low level control, high temperature control, and liquid temp control. This unit is also equipped with a microprocessor controlled automated loading and unloading system which also controls the opening and closing of the vapor retention cover.*

e. Initial Installation Date (month/year): *11/97*
Initial Startup Date (month/year): *12/97*
Most Recent Modification Date (if applicable)
(as defined in OAC rule 3745-31-01(J)) (month/year): *N/A*

f. Emissions Information:

Complete the following table for each criteria air pollutant proposed to be emitted from the emissions unit at a rate greater than one ton/year (list each pollutant on a separate line), and for any pollutant for which an emissions limit has been established (per a state or federal regulation or Permit to Install) which limits air emissions of the pollutant to less than one ton/year.

Pollutant Name	Proposed Maximum Hourly Emissions (pounds/hour)	Proposed Maximum Annual Emissions (tons/year)
Perchloroethylene	*0.19*	*0.82*

(If additional pollutants need to be identified, copy this page and attach the additional page(s). Check here _____ if additional copies of this page are attached.)

g. Proposed Operating Schedule:

Average: Hours/Day: *16* Maximum: Hours/Day: *24*
Hours/Year: *4,000* Hours/Year: *8,760*

EXHIBIT 6B

P019 Modification Letter from CDAQ

Morgan Matroc, Inc.
Electro Ceramics Division

232 Forbes Road
Bedford Ohio 44146 USA
Telephone (440) 232 8600
FAX (440) 232 8731

MATROC
Leaders in ceramic technology

February 9, 1999

Ms. Jane Bell
Air Quality Engineer
Cleveland Air Pollution Control
1925 St. Clair Avenue
Cleveland, OH 44114

RE: Replacement of Ohio EPA Source No. P019 for Morgan Matroc, Inc., Bedford, Ohio facility.

Dear Ms. Bell:

Pursuant to your recommendation, Morgan Matroc, Inc. respectfully is petitioning your office for a determination of the necessity to obtain a permit to install for the replacement of Ohio EPA Source No. P019 (solvent vapor degreaser) with a solvent vapor degreaser of lesser size and similar unit controls at the Morgan Matroc, Inc., Bedford, Ohio facility.

The existing air contaminant source (Ohio EPA P019) is a solvent vapor degreaser utilizing perchloroethylene. The solvent machine has a solvent/air interface area of 5.0 square feet. The P019 employs the following controls: (1) freeboard ratio of 1.00; (2) freeboard refrigeration device; (3) working-mode cover; (4) safety vapor control; and (5) low and high-level temperature controls. The replacement unit will contain the same or greater level of control as the existing degreaser. The replacement unit will also use perchloroethylene, have a solvent/air interface area of 4.4 square feet and be utilized in the same capacity and occupy the same building area as the existing one.

Based on the design of the replacement degreaser, Morgan Matroc, Inc. believes that its use will not result in an increase in perchloroethylene emissions and is essentially a " replacement in kind". Therefore, it is Morgan Matroc, Inc.'s contention that the replacement does not meet the definition of a "modification", as defined in Chapter 3745-31-01 (MM) of the Ohio Administrative Code and as such, is not required to submit a permit to install application and will by determination assume the terms and conditions of the existing Permit to Operate for P019.

Morgan Matroc, Inc. wishes to proceed with replacement of the existing degreaser as soon as possible and appreciates your time and consideration in this matter. If you have any questions regarding this correspondence, please contact Mr. Matt Kupcak of Tempo Associates Corporation, at (330) 935-30000 or (330) 352-5823.

Sincerely,

William Hocevar, P.E.
Morgan Matroc, Inc.

Cc: Matt Kupcak, Temco Associates Corporation
Doug Mehls, Morgan Matroc, Inc.

Exhibit #7:

Clicker from STARS

On Thursday, February 18, 1999 at 3.56 pm Erica Engel-Ishida entered the following information into the STARS permitting Activity Log Notes for Morgan Electro Ceramics 13-18-03-1627:

This facility was removed from STARS in error. This facility is still operating under the application shield. This application should remain in STARS until all emissions units in the application are issued or withdrawn.

Exhibit #8:

Exception report
Form Morgan

FACSIMILE REQUEST AND COVER SHEET

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
AIR AND RADIATION DIVISION
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

TO: Doug Vrooard

OF: C.D. APC

PHONE #: 216 664 4010 FAX#: 216 664 4879

FROM: Nancy Mugavero

OF: ARD

PHONE#: 312 353 4890 FAX#: 312 353 8289

DATE: 5/23/00 PAGES (Including cover sheet): 15

COMMENTS: Doug, Here's all the info I have on Morgan Electro Ceramics. If you have questions, please call. Nancy.

Morgan
Electro Ceramics

232 Forbes Road
Bedford
Ohio 44146-5418
USA
Tel: (440) 232-8600
Fax: (440) 232-8731
www.morganelectroceramics.com

March 24, 2000

Ms. Nancy Mugavero
USEPA Region 5
77 West Jackson Blvd. AE-17J
Chicago, IL 60604-3507

RE: **Exception Report for NESHAP, Ohio EPA ID L001**

Dear Ms Mugavero:

Morgan Electro Ceramics has submitted the Annual Report for Halogenated Solvent Cleaning Machines for RY 1999 and has shown an exception for Ohio EPA ID L001 for the three-month rolling average from 12/31/99 to 10/01/99. The inherent reason for the exception was due to mechanical problems with the degreaser. As a corrective action, the recirculating pump/motor assembly, high temperature control display, and thermocouples were replaced on 12/7/1999. The emission estimates for both prior three-month rolling averages showed values of 20.23 lbs/month/sq. ft. surface area and 16.4 lbs/month/sq. ft. surface area respectively. If you have any further questions, please contact me at (440) 232-8600.

Sincerely,

William J. Hocevar, P.E.
Facility Manager

cc: D. Mehls

City of Cleveland Memorandum
Michael R. White, Mayor

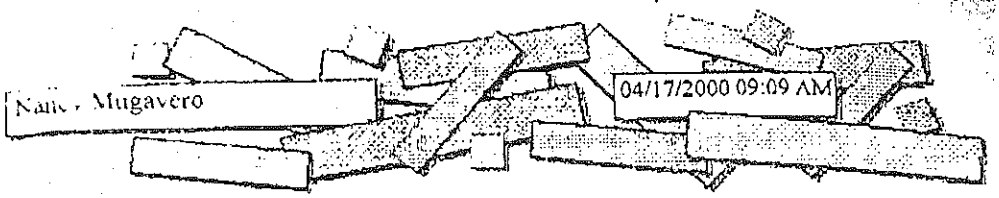
TO: Mark Vilem
FROM: Doug Broussard, Chief Field Enforcement
DATE: May 11, 2000

SUBJECT: Exceedance of Federal Emission Limit by Morgan Exectro Ceramics

In their Annual Report to USEPA dated March 10, 2000, Morgan Electro Ceramics reported an emission rate of Perchloroethylene from source L001 which was 34.7 lb/ft^2/month. This is in excess of the Federal allowable emission rate in their permit of 30.0 lb/ft^2/month. On March 24, 2000, Morgan Electro Ceramic submitted a letter to USEPA Region 5 which explained the cause of the exceedance (mechanical problems with the degreaser) and described corrective actions they had taken.

On May 24, 2000, I spoke with Ms. Nancy Mugavero of USEPA Region 5 and told her I had evaluated their permit and the Annual report and we agreed they they were in violation of the Federal emission limits. She indicated to me that Region 5 thought that the corrective actions outlined in Morgan's March 24, 2000 letter were adequate. I concurred. Therefore, I intend to close this issue from an enforcement standpoint. However, I am going to call Morgan and suggest that they contact the CAMP program to investigate alternatives cleaners to Perch.

CC: Nancy Mugavery



To Bill, Lisa Holscher/R5/USEPA/US
cc

Subject Morgan Electro Ceramics (AKA Morgan Matroc, Inc.), Bedford, Ohio, OEPA # 1318031627

Bill and Lisa,

This is to document the enforcement recommendation I have made regarding the above mentioned case. On March 21, 2000, I was assigned to review the annual report provided by the company pursuant to 63 Subpart T - the degreaser MACT. In the report, I noted that in December 1999 the company had a slight exceedance on one of its solvent cleaning machines. I phoned the company to request an explanation in writing of the exceedance. The wrote to explain that the machine had malfunctioned causing the exceedance. Since then, the company has repaired the machine and has had no further problems. I called the Cleveland Office to confirm that the permit limit was exceeded and that the limit is MACT-like as Ohio is not delegated to enforce Subpart T. Mark Villem of the Cleveland Office has asked to take the lead on this case After discussing it with Bill we concur that the Cleveland Office may follow up on this case

As of this message I have not contacted Mark, I left a message, but I will inform him of our decision.

Nancy

Note The report was entered in ETS incorrectly a resolution to the problem and documentation of this recommendation is forthcoming.

40 FROM:

Morgan Electro Ceramics

232 Forbes Road
Bedford
Ohio 44146-5418
USA

Tel: (440) 232-8600
Fax: (440) 232-8731
www.morganelectroceramics.com

March 10, 2000

Mr William MacDowell
Chief - Air Enforcement Section
USEPA Region 5
77 West Jackson Blvd. AE-17J
Chicago, Il. 60604-3507

SUBJECT: Annual Report for Halogenated Solvent Cleaning Machines

Dear Mr. MacDowell:

Enclosed please find the Annual Report for Halogenated Solvent Cleaning Machines subject to the Halogenated Solvent Cleaner NESHAP (40 CFR 63 Subpart T) at the Morgan Electro Ceramics, Bedford, Ohio facility.

Thank you for your consideration in this matter. If you have any questions regarding this correspondence, please contact me at (440) 232-8600.

Sincerely,

William J. Hocevar, P.E.
Facility Manager

RECEIVED
MAR 21 2000
AIR ENFORCEMENT BRANCH,
U. S. EPA, REGION 5

Enclosure

cc: Ed Fasko, Chief-Cleveland Air Pollution Control Division

Monthly Halogenated Solvent Emissions Calculations Worksheet

Facility Name:	Morgan Matroc, Inc.	EPA Facility ID:	118031627
Unit Name:	Baron Blakeslee MLR-2801-E	Ohio EPA I.D.:	L001
Company I.D.:	VPD-34	Year:	1999
Month:	December		

Unit Information

Tank Length (inside)	3.50	(feet)
Tank Width (inside)	1.33	(feet)
Tank Surface Area (s.a.)	4.67	$(feet)^2$

			Formulas / Notes
Solvent Usage Information			
1 Type Solvent Used	Perchloroethylene		[From MSDS]
2 S.G. of Solvent	1.62		[From MSDS]
3 Solvent Density	13.51	(lb/gallon)	
4 Solvent Added	12.0	(gallon)	[From monthly log]
5 Waste Removed	0.0	(gallon)	[From monthly log]
6 % Solvent in waste		(%)	[From analytical report]
7 Solvent Removed in waste	0.0	(gallon)	[gal. Waste] * [% solvent]
8 Pure Solvent Removed	0.0	(gallon)	[From monthly log]
9 Total Solvent Removed	0.0	(gallon)	[7 + 8]
10 Total Solvent Emitted	12.0	(gallon)	[4 + 9]
11 Total Solvent Emitted	162.1	(lbs)	[10 * 3]
Monthly Emissions			
Average Solvent Emission Rate	34.74205714	(lb/month/ ft^2 s.a.)	[11 / (tank surface area)]
Average Solvent Allowable Rate	30.6	(lb/month/ ft^2 s.a.)	From *40 CFR 63*, Subpart T

Note: If ave. solvent emission rate is < 30.6 lb/month/ft^2, NO action is required.
If ave. solvent emission rate is > 30.6 lb/month/ft^2, Note in quarterly exceedance report.

Three Month Rolling Average			
3 Month Average Solvent Emission Rate	51	(lb/month/ ft^2 s.a.)	[Average of three previous months solvent emission rates]

EXHIBIT 8A

Letter from Morgan including information for PIPL determination (Non-Title V)

Morgan
Electro Ceramics

April 8, 2003

Mr. David Pruchenski
Environmental Compliance Specialist
Cleveland Bureau of Air Pollution Control
1925 St. Clair Avenue
Cleveland, OH 44114-2080

Dear Mr. Pruchenski;

Pursuant to our telephone conversation on March 20th Morgan Electro Ceramics, Inc. has conducted a facility-wide emission inventory to determine our actual and potential emissions. The results of the study indicate that the facility's actual emissions are well below twenty percent of all major regulated pollutant thresholds. Based on Ohio Environmental Protection Agency's (Ohio EPA) policy for limiting the potential to emit, as outlined in Ohio EPA Engineering Guide 61, the facility is a non-Title V facility based on presumed inherent physical limitations due to its size.

Enclosed please find a copy of the facility emission inventory statement. As required by OAC Chapter 3745-78, the facility will continue to maintain emission records for fee purposes and will use these same records to document that the facility has presumed inherent physical limitations.

Please contact me at (440) 232-8600 if you have any questions or comments concerning the enclosed documents. Thank you for your assistance in this matter.

Sincerely,

William Hocevar, PE
Facility Engineering Manager
Morgan Electro Ceramics, Inc.

Enclosure

cc: Peter Morten, President, Morgan Electro Ceramics, Inc.
Al Metcalfe, Production Manager, Morgan Electro Ceramics, Inc.

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Plant
Ohio EPA ID No. 13-18-03-1627
2002 Facility Air Emission Summary

Source I.D. P015 **Deminimis Source** Yes

Actual Operating Hours 800 Average Production (lb/hr) 1.0

Max. Operating Hours 8760 Maximum Production (lb/hr) 1.5

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
Terpineol	8000-41-7	No	VOC	15	0.008	0.02	0.082	Material Balance
silver		No	Particulate	33	0.016	0.04	0.178	Material Balance
ethanol		No	VOC	100	0.050	0.13	0.548	Material Balance
tetrachloroethylene	127-18-4	Yes	HAP	0	0.000	0.00	0.000	Test Data 1993

Source I.D. P006 **Deminimis Source** Yes

Actual Operating Hours 800 Average Production (lb/hr) 1.0

Max. Operating Hours 8760 Maximum Production (lb/hr) 1.5

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
Terpineol	8000-41-7	No	VOC	15	0.008	0.02	0.082	Material Balance
silver paste (65% by wt)		No	Particulate	33	0.016	0.04	0.178	Material Balance
ethanol		No	VOC	100	0.050	0.13	0.548	Material Balance
tetrachloroethylene	127-18-4	Yes	HAP	0	0.000	0.00	0.000	Test Data 1993

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Plant
Ohio EPA ID No. 13-18-03-1627
2002 Facility Air Emission Summary

Source I.D. P007 **Deminimis Source** Yes

Actual Operating Hours 1000 Average Production (lb/hr) 1.0

Max. Operating Hours 8760 Maximum Production (lb/hr) 1.5

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
Nitric Acid		No	Acid mist	1200	0.010	0.02	0.085	Test Data 1993

Source I.D. P008 **Deminimis Source** Yes

Actual Operating Hours 1000 Average Production (lb/hr) N/A

Max. Operating Hours 8760 Maximum Production (lb/hr) N/A

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
Chromic Acid	1333-82-0	No	Acid Mist	40	0.000	0.00	0.0026	Test Data 1993
Nitric Acid	7697-37-2	No	Acid Mist	40	0.005	0.01	0.0420	Test Data 1993
Sulfuric Acid	7664-93-9	No	Acid Mist	40	0.005	0.01	0.0210	Test Data 1993

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Plant
Ohio EPA ID No. 13-18-03-1627
2002 Facility Air Emission Summary

Source I.D. P009 218 elements

Deminimis Source No

Actual Operating Hours: 2400

Average Production (lb/hr): N/A

Max. Operating Hours: 8760

Maximum Production (lb/hr): N/A

Pollutant Identification	Haz. Air Pollutant	Title V Pollutant Category	VOC Density (lb/gal)	Actual Emission (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
tetrachloroethylene	Yes	HAP	13.51	670.60	0.34	0.28	1.22	Material Balance (2001 & 2002)

Source I.D. P010

Deminimis Source Yes

Actual Operating Hours: 10

Average Production (lb/hr): N/A

Max. Operating Hours: 8760

Maximum Production (lb/hr): N/A

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
Solvents			VOC	17.5	0.009	1.75	7.665	Material Balance
Paints			VOC	17.5	0.009	1.75	7.665	Material Balance

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Plant
Ohio EPA ID No. 13-18-03-1627
2002 Facility Air Emission Summary

Source I.D. P011 **Deminimis Source** No

Actual Operating Hours 320 Average Production (lb/hr) N/A

Max. Operating Hours 8760 Maximum Production (lb/hr) N/A

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
poly vinyl alcohol	25213-24-5	No	VOC	320	0.160	1.00	4.380	Material Balance
Rhoplex RH-8	7440-22-4	No	Particulate	320	0.160	1.00	4.380	Material Balance
tetrachloroethylene	127-18-4	Yes	HAP	0	0.000	0.00	0.000	Material Balance
mineral oil	8042-47-5	No	VOC	320	0.160	1.00	4.380	Material Balance
epoxy cummings	25068-38-6	No	VOC	320	0.160	1.00	4.380	Material Balance
ethanol	1717-00-6	No	VOC	320	0.160	1.00	4.380	Material Balance

Source I.D. P013 **Deminimis Source** Yes

Actual Operating Hours 4000 Average Production (lb/hr) N/A

Max. Operating Hours 8760 Maximum Production (lb/hr) N/A

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
lead		Yes	Lead Cmpds	69.2	0.035	0.022	0.076	Test Data 1993
particulate		No	Particulate	140.0	0.070	0.044	0.153	Test Data 1993

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Plant
Ohio EPA ID No. 13-18-03-1627
2002 Facility Air Emission Summary

Source I.D. P014 **Deminimis Source** Yes

Actual Operating Hours 100 Average Production (parts/month) 300

Max. Operating Hours 8760 Maximum Production (parts/month) _____

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
lead		No	Lead Cmpds	21.6	0.011	0.22	0.946	Material Balance
particulate		No	Particulate	36.0	0.018	0.36	1.577	Material Balance

Source I.D. P005 **Deminimis Source** Yes

Actual Operating Hours 400 Average Production (lb/hr) 1.0

Max. Operating Hours 8760 Maximum Production (lb/hr) 1.5

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
ink solvents		No	VOC	260.0	0.130	0.65	2.847	

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Plant
Ohio EPA ID No. 13-18-03-1627
2002 Facility Air Emission Summary

Source I.D. P016 — **Deminimis Source** Yes

Actual Operating Hours: 500 — Average Production (lb/hr): 1.0

Max. Operating Hours: 8760 — Maximum Production (lb/hr): 1.5

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
lead		No	lead compds	300	0.150	0.60	2.628	Material Balance
mineral oil		No	VOC	500	0.250	1.00	4.380	Material Balance
silver paste (65% by wt)		No	Particulate	325	0.163	0.65	2.847	Material Balance

Source I.D. P017 — **Deminimis Source** Yes

Actual Operating Hours: 2000 — Average Production (lb/hr): N/A

Max. Operating Hours: 8760 — Maximum Production (lb/hr): N/A

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
toluene	108883	Yes	VOC	220.0	0.110	0.11	0.482	Material Balance
silver paste (65% by wt)		No	Particulate	260.0	0.130	0.13	0.569	Material Balance
terpineol	8000-41-7	No	VOC	600.0	0.300	0.30	1.314	Material Balance

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Plant
Ohio EPA ID No. 13-18-03-1627
2002 Facility Air Emission Summary

Source I.D. P018 — **Deminimis Source** Yes

Actual Operating Hours: 2000 — Average Production (lb/hr): 1.0

Max. Operating Hours: 8760 — Maximum Production (lb/hr): 1.5

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
silver ceramic		No	Particulate	200	0.100	0.10	0.438	Material Balance
terpineol	8000-41-7	No	VOC	600	0.300	0.30	1.314	Material Balance

Source I.D. P020 — **Deminimis Source** Yes

Actual Operating Hours: 2496 — Average Production (lb/hr): N/A

Max. Operating Hours: 8760 — Maximum Production (lb/hr): N/A

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
PVA	25213-24-5	No	VOC	2496.0	1.248	1.00	4.380	Material Balance
Rhoplex HA-8	7440-22-4	No	Particulate	2496.0	1.248	1.00	4.380	Material Balance
formaldehyde(0.07%	50-00-0	Yes	VOC	174.7	0.087	0.07	0.307	Material Balance
10 E.O. (2% by wt)	9036-19-5	No	VOC	60.0	0.030	0.02	0.105	Material Balance

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Plant
Ohio EPA ID No. 13-18-03-1627
2002 Facility Air Emission Summary

Source I.D. P019 **Deminimis Source** No

Actual Operating Hours 2400 Average Production (lb/hr) N/A

Max. Operating Hours 8760 Maximum Production (lb/hr) N/A

Pollutant Identification	Haz. Air Pollutant	Title V Pollutant Category	VOC Density (lb/gal)	Actual Emission (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
tetrachloroethylene	Yes	HAP	13.51	324.24	0.16	0.14	0.59	Material Balance (2001 and 2002)

Source I.D. P021 **Deminimis Source** Yes

Actual Operating Hours 4800 Average Production (lb/hr) 1.0

Max. Operating Hours 8760 Maximum Production (lb/hr) 1.5

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
zirconium oxide	1314-23-4	No	Particulate	37	0.02	0.01	0.03	AP-42
titanium dioxide	13463-67-7	No	Particulate	17	0.01	0.00	0.02	AP-42

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Plant
Ohio EPA ID No. 13-18-03-1627
2002 Facility Air Emission Summary

Source I.D. P001 — **Deminimis Source** Yes

Actual Operating Hours: 7200 — Average Production (lb/hr): N/A

Max. Operating Hours: 8760 — Maximum Production (lb/hr): N/A

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Actual Emissions (lb/hr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
Spray Dryer	cyclone 90%, bh 99%	Yes	Lead cmpds	0.011	0.040	11.00	48.18	Test Data 1993
		No	Particulate	0.017	0.061	17.00	74.46	Test Data 1993
60" Ducon	cyclone 90%, bh 99%	Yes	Lead cmpds	0.013	0.047	13.00	56.94	Test Data 1993
		No	Particulate	0.035	0.126	35.00	153.30	Test Data 1993

Source I.D. P004 — **Deminimis Source** Yes

Actual Operating Hours: 50 — Average Production (lb/hr): 1.0

Max. Operating Hours: 8760 — Maximum Production (lb/hr): 1.0

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Annual Usage (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
various chemicals		No	VOC	50	0.025	1.0	4.38	Material Balance

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Plant
Ohio EPA ID No. 13-18-03-1627
2002 Facility Air Emission Summary

Source I.D. L001 Poling 280 LE **Deminimis Source** No

Actual Operating Hours 2400 Average Production (lb/hr) N/A

Max. Operating Hours 8760 Maximum Production (lb/hr) N/A

Pollutant Identification	Haz. Air Pollutant	Title V Pollutant Category	VOC Density (lb/gal)	Actual Emission (lb/yr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
tetrachloroethylene	Yes	HAP	13.51	1452.85	0.73	0.61	2.65	Material Balance

Source I.D. Z001 Platinum Crucible Cleaning **Deminimis Source** No

Actual Operating Hours 864 Average Production (lb/hr) N/A

Max. Operating Hours 1296 Maximum Production (lb/hr) N/A

Pollutant Identification	CAS No.	Haz. Air Pollutant	Title V Pollutant Category	Actual Emission (lb/hr)	Actual Emissions (tpy)	Potential Emissions (lb/hr)	Potential Emissions (tpy)	AP-42 Material Balance Test Data
Acid Mist		No	PM	0.94	0.406	0.94	0.61	Material Balance

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Plant
Ohio EPA ID No. 13-18-03-1627
2002 Facility Air Emission Summary

Ohio EPA Emission Unit No.	Facility Source I.D.	Ohio EPA Emission Source Status	Calculation Method	Actual Operating Hours	Actual Annual Emissions					Potential Annual Emissions				
					VOC (tpy)	PM (tpy)	Pb (tpy)	Perc (tpy)	HAP (tpy)	VOC (tpy)	PM (tpy)	Pb (tpy)	Perc (tpy)	HAP (tpy)
Z001	VPD-35	Non-insignificant	MB	864	N/A	0.41	N/A	N/A	N/A	N/A	0.61	N/A	N/A	N/A
P015	VPD-2	No Longer in Use	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P006	VPD-3	Insignificant	N/A	800	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P007	VPD-4	Insignificant	N/A	1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P008	VPD-5	Insignificant	N/A	1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P009	VPD-6	Non-insignificant	MB	2400	N/A	N/A	N/A	0.34	0.34	N/A	N/A	N/A	1.22	1.22
P010	VPD-9	Insignificant	N/A	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P011	VPD-10	Non-insignificant	MB	320	0.64	0.16	0.00	0.00	0.00	17.52	4.38	N/A	N/A	N/A
P013	VPD-11	Insignificant	N/A	4000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P014	VPD-14	Insignificant	N/A	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P005	VPD-18	No Longer in Use	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P016	VPD-21	Insignificant	N/A	500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P017	VPD-22	Insignificant	N/A	2000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P018	VPD-23	Insignificant	N/A	2000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P020	VPD-26	Insignificant	N/A	2496	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P019	VPD-24	Non-insignificant	MB	2400	N/A	N/A	N/A	0.16	0.16	N/A	N/A	N/A	0.59	0.59
P021	VPD-33	Insignificant	N/A	4800	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P001	VPD-32	Non-insignificant	TD/MB	7200	N/A	0.19	0.09	N/A	0.09	N/A	227.76	105.12	N/A	105.12
P004	VPD-31	Insignificant	N/A	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
L001	VPD-34	Non-insignificant	MB	2400	N/A	N/A	N/A	0.73	0.73	N/A	N/A	N/A	2.65	2.65
FACILITY EMISSION TOTALS (tpy)					**0.64**	**0.75**	**0.09**	**1.22**	**1.31**	**17.52**	**232.75**	**105.12**	**4.47**	**109.59**

Note: All air emissions from sources considered "Insignificant" are specifically exempt from calculations to determine a facility's Title V applicability and meet the Ohio EPA De Minis exemption. "De Minimis" sources are exempt from obtaining a permit to install and operate as long as they meet minimum recordkeeping reqs.

Abbreviations:

PTE: potential to emit
VOC: volatile organic compound
PM: particulate matter
Pb: lead
MB: Material Balance
TD: Stack Test Data
AP-42: AP-42 emission factor
tpy: tons per year
Perc: perchloroethylene
HAP: hazardous air pollutant
N/A: not applicable

Exhibit # 9:

Information received from Morgan for Compliance Inspection

Cleveland Local Air Agency
Information request for Morgan Electro Ceramics, Facility ID#: 12-18-031627

1. List of emission units that have been shut-down or removed from facility:
   - P004 (VPD-1), Chemical lab for screen printing process, fan and duct are still in place but no longer used, area is Clean Room, shutdown date - 2000
   - P012 (VPD-10A), Silicone oil bath, removal date- 1995
   - P014 (VPD-14), Model shop grinder exhaust hood, exhaust now flows through HEPA filter and recirculated, shutdown date – December 2002
   - P009 (VPD-6), Baron Blakeslee model MLR-120 vapor degreaser shutdown – December 2000 (only one of the degreaser removed, another one is still there for P009)
   - P020 (VPD-26), Three Platinum kilns removed April 1997

2. List of emission units added to the facility since 1995:
   - L001 (VPD-34), Baron Blakeslee model vapor degreaser installed – 1999
   - P022 (VPD-35), Platinum Crucible Cleaning hood installed – 2003

3. List of emission units that have been modified since 1995:
   - P021 (VPD-33), Lanly ceramic drying oven was replaced with the Gruenberg drying oven, removal date– February 1995
   - P001 (VPD-32B), Ducon model 48 wet scrubber removed, new exhaust fan, new exhaust stack, high efficiency cyclone and pulse jet baghouse installed– 2002
   - P001 (VPD-32C), Ducon model 60 wet scrubber replaced with new Ducon model 60 wet scrubber – July, 2003
   - P019 (VPD-24), Liberty 2002-2-SP vapor degreaser replaced with Finishing Equipment 6342 vapor degreaser – July, 1999
   - P018, (VPD-23) Lanly gas fired oven, removed August 1996 and replaced with Infrared drying oven October 1996

4. List of solvents used in L001(VPD-34): perchloroethylene

5. List of solvents used in P009(VPD-6): perchloroethylene

6. List of solvents used in P019(VPD-24): perchloroethylene

7. 2002 Purchase Records for solvents used in degreasers: 8 total shipments
   - 1/4/2002 – 4 drums, 2800 lbs
   - 2/7/2002 – 4 drums, 2800 lbs
   - 3/8/2002 – 4 drums, 2800 lbs
   - 5/8/2002 – 4 drums, 2800 lbs
   - 6/21/2002 – 4 drums, 2800 lbs
   - 8/9/2002 – 4 drums, 2800 lbs
   - 9/11/2002 – 4 drums, 2800 lbs
   - 10/22/2002 – 4 drums, 2800 lbs

EC2

Total = 32 drums, 22,400 lbs

8. 2002 waste manifests for solvents disposed of from degreasers: 4 shipments
   - 3/8/20024 – 3 drums, 2100 lbs
   - 5/29/2002 – 3 drums, 2100 lbs
   - 8/20/2002 – 3 drums, 2100 lbs
   - 10/17/2002 – 3 drums, 2100 lbs

   Total = 12 drums, 8400 lbs (3 drums, 2100 lbs onsite in Haz. Waste storage area #1)

9. 2002 quarterly deviation reports for P022: Platinum Cleaning Process: No deviation reports done

10. 2002 maintenance and repair records for all degreasers:

11. Solvent additions and removal logs for all degreasers:
    - Baron Blakeslee MLR-280LE, L001 (VPD-34) – 1999 to present
    - Baron Blakeslee MLR-120, P009 (VPD-6A) – 1999 to 2001
    - Baron Blakeslee MLR-216, P009 (VPD-6B) – 1999 to present
    - Liberty 2002-2-SP, P019 (VPD-24) – January 1999 to July 1999
    - Finishing Equipment 6342, P019 (VPD-24) – August 1999 to present

Reviewed no removal noted on P009 & P019

12. Monthly records for P022 (VPD-35) Platinum Cleaning Process: No records

13. Facility Process Flow Diagram:

Exhibit # 10:

Calculations
From
Inspection Report

Morgan Electro-Ceramics Degreaser Compliance Check

L001 - Perc. degreasing machine

	CY 2002 July	August	September	October	November	December	CY 2003 January	February	March	April	May	June	Ave hourly emissions July 2002 through June 2003 = 1.7495169 lb/hour July	August	September	October	November	December
Rolling, 3-month average (kg/m^2/average) =																		
Total annual solvent emissions, rolling 12-month (kg / 12-month) =																		
Total annual solvent emissions, rolling 12-month (lb / 12-month) =																		
Total annual solvent emissions, rolling 12-month (tons / 12-month) =																		
Total solvent emissions (kg/month) =	69.624666	101.06806	138.57554	102.70986	111.69369	116.85939	107.94968	85.490106	72.014364	101.06806	229.0876	370.5829						
Total solvent emissions (lb/month) =						696.94731	764.74787	813.77213	893.43656	1040.5093	1438.8315	1904.562	1714.593	1628.8005	1526.4624	1434.3519	1324.0473	1207.6147
Ei (solvent emissions), kg/m^2/month =						1536.5058	1685.9805	1794.0605	1969.6905	2293.9305	3172.0805	4198.8405	3780.0305	3590.8905	3365.2735	3162.2046	2919.0246	2662.3346
Ei conversion check, kg/m^2/month =						0.7682529	0.8429902	0.8970302	0.9848452	1.1469652	1.5860402	2.0994202	1.8900152	1.7954452	1.6826367	1.5811023	1.4595123	1.3311673
Ei (solvent emissions), lbs/ft^2/month =	189.96902	85.792461	102.33815	92.110463	110.30459	116.43263	67.800556	49.024263	79.664428	147.07279	398.32214	465.7305	0	0	0	0	0	0
SAi (total solvent added at start of month), kg =	418.81	189.14	225.617	203.06881	243.18	256.69	149.47464	108.08	175.63	324.24	878.15	1026.76	0	0	0	0	0	0
SAi (total solvent added at start of month), lb =	208.874	94.330192	112.52244	101.27694	121.28168	128.01955	74.547803	53.902967	87.592321	161.7089	437.96161	512.07819						
LSRi (total liquid solvent removed at start of month), kg =	208.874	94.330192	112.52244	101.27694	121.28168	128.01955	74.547803	53.902967	87.592321	161.7089	437.96161	512.07819						
LSRi (total liquid solvent removed at start of month), lb =	42.779367	19.319714	23.045659	20.742473	24.839632	26.219612	15.268094	11.039837	17.939734	33.11951	89.698672	104.87845						
SSRi (total solid solvent removed at start of month), kg =	189.96902	85.792461	102.33815	281.88951	110.30459	116.43263	459.60247	49.024263	79.664428	147.07279	398.32214	465.7305						
SSRi (total solid solvent removed at start of month), lb =	418.81	189.14	225.617	621.46	243.18	256.69	1013.25	108.08	175.63	324.24	878.15	1026.76						
AREAi (the solvent/air interface area of the cleaning machine), m^2 =	0	0	0	189.77905	0	0	391.80191	0	0	0	0	0						
AREAi (the solvent/air interface area of the cleaning machine), ft^2 =	0	0	0	418.39119	0	0	863.77536	0	0	0	0	0						
Density solvent (lb/gal) =	0	0	0	0	0	0	0	0	0	0	0	0						
Solvent Added (gal) =	0	0	0	0	0	0	0	0	0	0	0	0						
% Solvent in waste (%) =	0.909491	0.909491	0.909491	0.909491	0.909491	0.909491	0.909491	0.909491	0.909491	0.909491	0.909491	0.909491						
Waste Removed (gal) =	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79						
	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51						
	31	14	16.7	46	18	19	75	8	13	24	65	76						
	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999						
	0	0	0	31	0	0	64	0	0	0	0	0						

P009 - Perc. degreaser machine

	July	August	September	October	November	December	CY 2003 January	February	March	April	May	June	Ave hourly emissions July 2002 through June 2003 = 0.29 lb/hour July	August	September	October	November	December
Rolling, 3-month average (kg/m^2/average) =	#REF!	#REF!	61.535562	87.043589	102.3484	102.35861	76.68733	25.671278	25.508026	51.016052	76.669474	97.075895						
Total annual solvent emissions, rolling 12-month (kg / 12-month) =						196.86919	227.50935	227.50935	227.50935	288.78968	319.60449	344.11662	313.28036	270.38413	270.20029	208.72387	147.44354	147.24744
Total annual solvent emissions, rolling 12-month (lb / 12-month) =						434.02226	501.57226	501.57226	501.57226	636.67226	704.6073	758.6473	690.66498	596.09498	595.68968	460.15736	325.05736	324.62504
Total annual solvent emissions, rolling 12-month (tons / 12-month) =						0.2170111	0.2507861	0.2507861	0.2507861	0.3183361	0.3523036	0.3793236	0.3453325	0.2980475	0.2978448	0.2300787	0.1625287	0.1623125
Total solvent emissions (kg/month) =	30.836262	42.89623	0.183841	61.476426	61.280329	0.1960971	30.640165	0	0	61.280329	30.814814	24.512132	0	0	0	0	0	0
Total solvent emissions (lb/month) =	67.98232	94.57	0.4053	135.53232	135.1	0.43232	67.55	0	0	135.1	67.935035	54.04	0	0	0	0	0	0
Ei (solvent emissions), kg/m^2/month =	77.013833	107.13371	0.4591445	153.53791	153.04816	0.4897541	76.524079	0	0	153.04816	76.960266	61.219263						
Ei conversion check, kg/m^2/month =	77.013833	107.13371	0.4591445	153.53791	153.04816	0.4897541	76.524079	0	0	153.04816	76.960266	61.219263						
Ei (solvent emissions), lbs/ft^2/month =	15.77316	21.941995	0.0940371	31.446014	31.345708	0.1003063	15.672854	0	0	31.345708	15.762189	12.538283						
SAi (total solvent added at start of month), kg =	226.73722	42.89623	183.84099	257.37738	61.280329	196.09705	30.640165	0	0	61.280329	205.2891	24.512132						
SAi (total solvent added at start of month), lb =	499.87	94.57	405.3	567.42	135.1	432.32	67.55	0	0	135.1	452.585	54.04						
LSRi (total liquid solvent removed at start of month), kg =	195.90096	0	183.65715	195.90096	0	195.90096	0	0	0	0	174.47429	0						
LSRi (total liquid solvent removed at start of month), lb =	431.88768	0	404.8947	431.88768	0	431.88768	0	0	0	0	384.64997	0						
SSRi (total solid solvent removed at start of month), kg =	0	0	0	0	0	0	0	0	0	0	0	0						
SSRi (total solid solvent removed at start of month), lb =	0	0	0	0	0	0	0	0	0	0	0	0						
AREAi (the solvent/air interface area of the cleaning machine), m^2 =	0.400399	0.400399	0.400399	0.400399	0.400399	0.400399	0.400399	0.400399	0.400399	0.400399	0.400399	0.400399						
AREAi (the solvent/air interface area of the cleaning machine), ft^2 =	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31						
Density solvent (lb/gal) =	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51						
Solvent Added (gal) =	37	7	30	42	10	32	5	0	0	10	33.5	4						
% Solvent in waste (%) =	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999						
Waste Removed (gal) =	32	0	30	32	0	32	0	0	0	0	28.5	0						

P019 - Perc. degreaser machine

	July	August	September	October	November	December	CY 2003 January	February	March	April	May	June	Ave hourly emissions July 2002 through June 2003 = 0.24 lb/hour July	August	September	October	November	December
Rolling, 3-month average (kg/m^2/average) =	#REF!	#REF!	0.1255018	40.286084	40.160582	40.321224	0.3313248	0.3313248	200.9736	456.8266	760.541	785.6414						
Total annual solvent emissions, rolling 12-month (kg / 12-month) =						49.373561	49.581914	49.581914	294.70323	607.23291	977.9789	1253.7404	1253.7404	1253.5872	1253.5872	1204.5629	1204.5629	1204.3668
Total annual solvent emissions, rolling 12-month (lb / 12-month) =						108.85007	109.30941	109.30941	649.70941	1338.7194	2156.0744	2764.0244	2764.0244	2763.6867	2763.6867	2655.6067	2655.6067	2655.1743
Total annual solvent emissions, rolling 12-month (tons / 12-month) =						0.054425	0.0546547	0.0546547	0.3248547	0.6693597	1.0780372	1.3820122	1.3820122	1.3818433	1.3818433	1.3278033	1.3278033	1.3275872
Total solvent emissions (kg/month) =	0	0.1532008	0	49.024263	0	0.1960971	0.2083531	0	245.12132	312.52968	370.74599	275.76148	0	0	0	0	0	0
Total solvent emissions (lb/month) =	0	0.33775	0	108.08	0	0.43232	0.45934	0	540.4	689.01	817.355	607.95						
Ei (solvent emissions), kg/m^2/month =	0	0.3765055	0	120.48175	0	0.481927	0.5120474	0	602.40873	768.07113	911.1432	677.70982						
Ei conversion check, kg/m^2/month =	0	0.3765055	0	120.48175	0	0.481927	0.5120474	0	602.40873	768.07113	911.1432	677.70982						
Ei (solvent emissions), lbs/ft^2/month =	0	0.0771119	0	24.675799	0	0.0987032	0.1048721	0	123.379	157.30822	186.61073	138.80137						
SAi (total solvent added at start of month), kg =	0	153.20082	0	49.024263	0	196.09705	208.35312	0	245.12132	312.52968	370.74599	275.76148						
SAi (total solvent added at start of month), lb =	0	337.75	0	108.08	0	432.32	459.34	0	540.4	689.01	817.355	607.95						
LSRi (total liquid solvent removed at start of month), kg =	0	153.04762	0	0	0	195.90096	208.14477	0	0	0	0	0						
LSRi (total liquid solvent removed at start of month), lb =	0	337.41225	0	0	0	431.88768	458.88066	0	0	0	0	0						
SSRi (total solid solvent removed at start of month), kg =	0	0	0	0	0	0	0	0	0	0	0	0						
SSRi (total solid solvent removed at start of month), lb =	0	0	0	0	0	0	0	0	0	0	0	0						
AREAi (the solvent/air interface area of the cleaning machine), m^2 =	0.406902	0.406902	0.406902	0.406902	0.406902	0.406902	0.406902	0.406902	0.406902	0.406902	0.406902	0.406902						
AREAi (the solvent/air interface area of the cleaning machine), ft^2 =	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38						
Density solvent (lb/gal) =	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51	13.51						
Solvent Added (gal) =	0	25	0	8	0	32	34	0	40	51	60.5	45						
% Solvent in waste (%) =	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999						
Waste Removed (gal) =	0	25	0	0	0	32	34	0	0	0	0	0						

EXHIBIT 10A

Inspection Report

CLEVELAND LOCAL AIR AGENCY
FACILITY INSPECTION REPORT

REVISED: 01/22/03

OhioEPA
DAPC - APPENDIX N

FACILITY INFORMATION

Date of Inspection: September 18 and October 6, 2003
Arrival Time: 10:00 am and (10:00-10:30 am on Oct. 6th)
Departure Time: 1:10 pm
Date of Previous Inspection: December 11, 1989
Inspection Announced: [Yes] No
Facility Identification Number: 13-18-03-1627
Facility Name: Morgan Electro Ceramics, Inc.
Facility Address: 232 Forbes Road Bedford, Ohio 44146
Facility County: Cuyahoga
Mailing Address: 232 Forbes Road Bedford, Ohio 44146
Responsible Official: Peter Molten, President
Primary Facility Representative: William Hocevar
Title of Primary Representative: Facility Engineering Manager
Representative Phone Number: (440) 232-2600 Ext. 278
Representative Fax Number: (440) 232-8731
Representative Email: bhocevar@morganelectroceramics.com

Facility Type: MegaSite [Title V] FESOP SMTV-PTI Minor/Other

Federal Facility Type: NSPS NESHAP [MACT] PSD Emissions Offset SM-PTI

Pollutants Regulated at Facility: [PE] [Lead] OC [VOC] CO NO_x SO_x [HAPs] Air Toxics

List HAPs, if applicable: Lead, Perchloroethylene

Attainment Designation: **PM_{10}** A **$PM_{2.5}$** U **SO_2** P† **Ozone (1hr)** A **Ozone(8hr)** U **CO** A **NO_x** A
(P = Primary Non-Attainment, S = Secondary Non-Attainment, A = Attainment, U = Unclassified)
†Bay Village, Berea, Brecksville, Broadview Heights, Fairview Park, Middleburg Heights, North Olmsted, North Royalton, Olmsted Falls, Olmsted Twp., Riveredge Twp., Rocky River, Strongsville, & Westlake are not included in the non-attainment area for SO_2

Is any part of the facility's file confidential? Yes [No]

Required Safety Equipment: Safety glasses and safety boots

Inspected By: Valencia White **Date Report Completed:** 10/13/03

Signature of Inspector: Valencia White **Date:** 10/13/03

Signature of Permit Writer: David L. Patchin **Date:** 10-13-03

Report Reviewed By: Andrea E. Hall **Date:** 10/15/03

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INSPECTION SUMMARY

Morgan Electro Ceramics manufactures piezoelectric ceramics at the Bedford location (see attachment 1). These ceramics electrodes are applied in a variety of apparatus' from pacemakers to computer chips.

The following individuals were present for the inspection:

William Hocevar	Facility Engineering Manager	Morgan Electro Ceramics, Inc.
Tim Jones	Technical Assistant Manager	Morgan Electro Ceramics, Inc.
David Pruchenski	Env. Compliance Specialist	Ohio EPA – CLAA
Andrew Shroads	Field Enforcement Manager	Ohio EPA – CLAA
Valencia White	Env. Enforcement Specialist II	Ohio EPA – CLAA
Kristen Switzer	Environmental Specialist	Ohio EPA – NEDO
Wade Blaster	Environmental Specialist	Ohio EPA - NEDO

Mr. Hocevar and Mr. Jones met CLAA and NEDO representatives in the lobby of Morgan Electro Ceramics (Morgan). Morgan representatives led CLAA and NEDO to a conference room to discuss the expectations from the inspection. Mrs. White began the discussion by referring to the information request (see attachment 2). Morgan provided CLAA with all of the information requested (see attachments 4-6) except for the facility flow diagram and the 2002 Quarterly Deviation Reports for P022. Morgan had a flow diagram that CLAA reviewed, but Morgan stated that the information was confidential and that they would forward a flow diagram CLAA could refer to. The 2002 Quarterly Deviation Reports for P022 were not available because the source has not operated since installation. During this conference, CLAA addressed the Title V applicability in relation to Morgan's emissions and past Title V application filing concerns. CLAA discussed what actions Morgan needs to take in order to be in compliance, which included submitting a Title V application.

After reviewing the records kept, Morgan led CLAA and NEDO on a facility tour. While touring the facility, CLAA discovered emissions units that were originally on registration status are now either exempt from permitting, de minimis or in violation of operating without a Title V permit (see page 4 of report for exempted and de minimis sources). Emissions units that were listed as registration status and are now in violation of operating without a permit are P001: (VPD-32) C 1416 Bickely Ceramic Kiln and Powder Preparation Area, P009: (VPD-6) Seven Cleaning Stations and One Vapor degreaser and P019: (VPD-24) Liberty 2002-2-SP Open Top Vapor Degreaser. P009 originally had seven cleaning stations and two vapor degreasers but one of the degreasers was removed in December of 2000. P019 was replaced in 1999 with a Finishing Equipment 6342 Vapor Degreaser without first obtaining a permit to install.

Morgan is considered a Title V facility based on potential to emit limitations for lead and VOC/HAP (see attachment 3).

Referring to Attachment 3, the 2002 Facility Air Emissions Summary report, P011: VPD-10 is listed as non-insignificant. P011 is a material science laboratory poling oven vent. P011 operates one shift (8 hours/day, 5 days/week) and is not subject to MACT, therefore CLAA feels this source is insignificant based on de minimis status.

After touring the facility, the inspection ended in the conference room of Morgan were CLAA discussed the violations again and explained that a letter will follow within two weeks outlining all violations (attachment 11). CLAA reviewed 2002 maintenance records and received a copy of the addition and removal logs for the

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degreasers (see attachment 6). CLAA and NEDO thanked Morgan for their time and left the premises. On October 6, 2003, Ms. White returned to Morgan Electro Ceramic to observe visible emissions (see attachment 10) from P001. No emissions were observed. Since the facility has not received any past complaints this source is presumed to be inherently clean.

ATTACHMENTS

Attachment 1:	Facility Location
Attachment 2:	Information Request
Attachment 3:	2002 Facility Air Emissions Summary
Attachment 4:	Information Obtained from Facility
Attachment 5:	2002 Purchase records and waste manifest for degreasers
Attachment 6:	2002 Addition and Removal logs for Degreasers
Attachment 7:	MSDS for Perchloroethylene degreasers
Attachment 8:	Calculations
Attachment 9:	Withdrawal Form
Attachment 10:	Visible Emissions
Attachment 11:	Notice of Violation

FACILITY DETAIL

Is the facility in compliance with the facility-wide operational, record keeping, and reporting requirements of permit terms and conditions? Yes [No] N/A

If no, identify all operational, record keeping, and reporting requirements not complied with, both verbally during the inspection and in writing after the inspection:

Morgan is violating Title V applicability regulations, P001: (VPD-32) Bickley Ceramic Kiln and Power Prep, P009: (VPD-6) Baron Blakeslee open top degreaser and 6 cleaning stations, P019: (VPD-24) Finishing Equipment 6342 vapor degreaser is operating without a permit. L001: (VPD-34) Baron Blakeslee open top batch vapor degreaser along with P019 has exceeded the 3-month rolling emissions limitation of PTI #13-3371 and the MACT standard.

For those facilities that have received a final Title V permit, was an Annual Certification of Compliance submitted as required by OAC 3745-77-04(C)(10)? Yes No [N/A]

Is the Annual Certification of Compliance correct? Yes No

Has the Ohio EPA or CLAA taken enforcement action against the company within the last 5 years? [Yes] No N/A

If YES, identify the emissions units subject to and description of the enforcement action(s):

In 1998, CLAA issued Morgan a Letter of Warning requesting Morgan to submit State Permit to Operate applications for all non-insignificant emissions units, to which Morgan never addressed.

OVERALL COMPLIANCE EVALUATION

The following violations were discovered: Operating without Title V permit, operating without a PTI for P001 and P019, failure to submit fee emissions reports and exceeding emissions limitations.

If violations were discovered, were non-compliance issues reviewed verbally with the facility contact during the exit interview or while conducting the inspection? [Yes] No

Type Inspection Follow-up: NOV

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EMISSIONS UNITS REQUIRING PERMIT(S)

Emissions Unit:	Description:
L001	Baron Blakeslee open top vapor perchloroethylene (VPD-34)
P001	Bickley Ceramic Kiln and Powder Prep. Tempress Furnace (VPD-32)
P009	Seven Cleaning Stations and One Vapor Degreaser for Ceramic Parts (VPD-6)
P019	Finishing Equipment 6342 Open Top Vapor Degreaser and 3 Poling Rings (VPD-24)
P022	Platinum Cleaning Process (VPD-35)

INSIGNIFICANT EMISSIONS UNITS *(TITLE V ONLY)*

Emissions Unit:	Description:	Reason:
P005	Packing Exhaust Hood over Stamping Machines (VPD-18)	OAC Rule 3745-15-05(B)*
P006	Special Manufacturing Area Kiln and Exhaust Hood (VPD-3)	OAC Rule 3745-15-05(B)*
P007	Plating Room Lab Hood from Misc. Processes (VPD-4)	OAC Rule 3745-15-05(B)*
P008	Plating Room Lab Hood from Misc. Processes (VPD-5)	OAC Rule 3745-15-05(B)*
P010	Solvent Room Exhaust Hood (VPD-9)	Ohio EPA Engineering Guide 62 Trivia Source #4**
P011	Material Science Lab Poling Oven Vent (VPD-10)	OAC Rule 3745-31-03(A)(1)(i)*
P013	Engineering Kiln Vents (VPD-11)	OAC Rule 3745-15-05(B)*
P016	Royal Master Grinding Area Exhaust Hood (VPD-21)	OAC Rule 3745-15-05(B)*
P017	Screen Printing Electroding Area – Exhaust Hoods (VPD-22)	OAC Rule 3745-15-05(B)*
P018	Silver Drying Oven (VPD –23)	OAC Rule 3745-31-03(A)(1)(a)*
P020	Two (2) Bisque Belt Kiln (VPD-26)	OAC Rule 3745-31-03(A)(1)(a)*
P021	Gruenberg Ceramic Drying Oven, Tempress Furnace (VPD-33)	OAC Rule 3745-31-03(A)(1)(a)*

*These sources are also subject to OAC Rule 3745-77-01(U)(1)

**P010 is a trivia source, which should not have been considered an emissions unit.

REGISTRATION STATUS SOURCES *(NON-TITLE V ONLY)*

Emissions Unit:	Description:	Reason:
N/A	N/A	N/A

DE MINIMUS AND EXEMPTED SOURCES *(NON-TITLE V ONLY)*

Emissions Unit:	Description:	Reason:
N/A	N/A	N/A

NON-OPERATIONAL SOURCES

Emissions Unit:	Description:	Last Operational Date:
P009*	Baron Blakeslee vapor degreaser	June 2003
P022	Platinum Cleaning Process (VPD-35)	Hasn't started up yet

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SHUTDOWN SOURCES

Emissions Unit:	Description:	Shutdown Date:
P004	Chemical Lab Hood from Misc. Processes (VPD-1)	2000
P014	Model Shop Grinder Exhaust Hood (VPD-14)	2002
P015**	Special Manufacturing Area Screen Printing Hood (VPD-2)	2000
P020***	(3) Bisque Belt Kiln (VPD-26)	1997

*P009 originally consisted of two (2) vapor degreasers and six (6) cleaning stations. In 2000, one of the degreasers was removed (see attachment 4) and the other degreaser has been down since June of this year.

**P015 is not listed in attachment 3 because it was in the same room as P004.

***P020 originally consisted of five (5) Bisques Belt Kilns. In 1997, three (3) of them were removed.

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CLEVELAND LOCAL AIR AGENCY FACILITY INSPECTION REPORT

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EMISSIONS UNIT DETAIL

Identifier: L001
Description: Baron Blakeslee Open Top Vapor Degreaser using Perchloroethylene

Applicable Restrictions/Limitations	Restricted Category
OAC Rule 3745-31-05 (A)(3)	BAT
OAC Rule 3745-21-09(O)	VOC
40 CFR 63 Subpart T (63.464)	MACT

PERMIT STATUS

PTI Number: 13-3371 **Date PTI Issued:** 01/21/99 **Date PTI App Submitted:** 11/18/97
BAT: Compliance w/ applicable sections of 40 CFR 63 Subpart T and the MACT standard for the halogenated solvent cleaners
Date PTO Issued: N/A **Date PTO Expires:** N/A **Date PTO App Submitted:** N/A

CONTROL EQUIPMENT

Is Air Pollution Control Equipment (APCE) required?	Yes	[No]	N/A
If YES, is the APCE required to be performance tested?	Yes	[No]	N/A
Were the required APCE reports submitted?	Yes	No	[N/A]
Are the required APCE reports adequate?	Yes	No	[N/A]

List APCE: refrigerated freeboard chiller and condenser

COMPLIANCE DATA

Does this emissions unit comply with applicable Monitoring, Record Keeping, and Reporting requirements?	Yes	[No]	
Were Visible Emissions Observations Performed?	Yes	No	[N/A]
If not, why?			
Has the source been modified?	Yes	[No]	
Is this emissions unit connected to other emissions units?	Yes	[No]	

List process records required for review: maintenance and repair logs and solvent addition and removal logs
Maximum Process Weight Rate (indicate units): N/A
Monitored Operating Parameter (i.e. pressure drop, temperature, pH): kilograms/m^2/month

Were the required CEM/COM/CAM reports submitted?	Yes	No	[N/A]
Are the required CEM/COM/CAM reports adequate?	Yes	No	[N/A]
Were the required deviation reports submitted?	[Yes]	No	N/A
Are the required deviation reports adequate?	[Yes]	No	N/A
Were any other required reports submitted?	[Yes]	No	N/A
Are any other required reports adequate?	[Yes]	No	N/A

List any other reports required: annual solvent emissions report and a semi-annual exceedance report.

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COMPLIANCE DATA (CONTINUED)

Emissions Estimates:

Category	Uncontrolled	Actual	Allowable	Potential to Emit
VOC/HAP	1.75 lbs./hour	1.75 lbs./hour	2.26 lbs./hour	2.26 lbs./hour
VOC/HAP	2.09 tpy	2.09 tpy	9.90 tpy	9.90 tpy

Other Limitations:

VOC/ HAP 371 kilograms/m^2/month 150 kilograms/m^2/month average

Category	Actual	Allowable
Visible Emissions	N/A	N/A

CALCULATIONS/EQUATIONS

405.7 gallons added – 95 gallons removed = 310.7 gallons/yr emitted

310.7 gal./yr * 13.51 lbs./gal. = 4197.557 lbs./yr
4197.557 lbs./yr * 1 yr/2400 hrs. = 1.7489 lbs./hr
4197.557 lbs./yr* 1ton /2000 lbs. = 2.0987 tpy

Also See Attachment 8

GIVENS

Annual operating hours = 2400
Solvent /Air Interface Ratio = 9.79 ft^2
Density of Perc. = 13.51 lbs./gal.
Annual Perc. added = 405.7 gallons
Annual Perc. removed = 95 gallons

COMPLIANCE EVALUATION

Compliance Determination: Not in Compliance

Comments: Actual and uncontrolled emissions are estimates based on information obtained from the facility for the calendar year July 2002 to July 2003. L001 is in violation of not submitted a permit after PTI#13-3371 was issued (see attachment 11). The facility is considering changing the alternative MACT standard of 3 month rolling average to something else, since in May and June Morgan exceeded the 150 kilograms/m^2/month average for 2003 (see attachment 8).

Inspected by: Valencia White **Date:** 10/13/03

Reviewed by: MDS **Date:** 10/15/03

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EMISSIONS UNIT DETAIL

Identifier: P001
Description: Bickley C344 Ceramic Bisque Kiln and PZT Ceramic Process Equipment (VPD-32)

Applicable Restrictions/Limitations
OAC Rule 3745-17-11(B)
OAC Rule 3745-17-07(A)(1)
Unknown

Restricted Category
Particulate Emissions
Visible Emissions
Lead

PERMIT STATUS

PTI Number: N/A **Date PTI Issued:** N/A **Date PTI App Submitted:** N/A
BAT: N/A
Date PTO Issued: 11/07/86 **Date PTO Expires:** 11/06/89 **Date PTO App Submitted:** 12/11/89*
* On 01/30/90, P001 was awarded registration status. No renewal PTO applications have been received since.

CONTROL EQUIPMENT

Is Air Pollution Control Equipment (APCE) required?	[Yes]	No	N/A
If YES, is the APCE required to be performance tested?	Yes	[No]	N/A
Were the required APCE reports submitted?	Yes	No	[N/A]
Are the required APCE reports adequate?	Yes	No	[N/A]

List APCE: Wet Scrubber and Baghouse

COMPLIANCE DATA

Does this emissions unit comply with applicable Monitoring, Record Keeping, and Reporting requirements?	Yes	[No]	
Were Visible Emissions Observations Performed?	[Yes]	No	N/A
If not, why?			
Has the source been modified?	[Yes]	No (See attachment 4)	
Is this emissions unit connected to other emissions units?	Yes	[No]	

List process records required for review: N/A
Maximum Process Weight Rate (indicate units): Unknown
Monitored Operating Parameter (i.e. pressure drop, temperature, pH): N/A

Were the required CEM/COM/CAM reports submitted?	Yes	No	[N/A]
Are the required CEM/COM/CAM reports adequate?	Yes	No	[N/A]
Were the required deviation reports submitted?	Yes	No	[N/A]
Are the required deviation reports adequate?	Yes	No	[N/A]
Were any other required reports submitted?	Yes	No	[N/A]
Are any other required reports adequate?	Yes	No	[N/A]

List any other reports required: None

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COMPLIANCE DATA (CONTINUED)

Emissions Estimates:

Category	Uncontrolled	Actual	Allowable	Potential to Emit
PE	Unknown	0.19 tpy	Unknown	227.76 tpy
Lead	Unknown	0.09 tpy	Unknown	105.12 tpy

Other Limitations:

Category	Actual	Allowable
Visible Emissions	0%	20%

CALCULATIONS/EQUATIONS

None

GIVENS

Attachment 3

COMPLIANCE EVALUATION

Compliance Determination: Not in Compliance.

Comments: Originally P001 was issued registration status in 1990. Since the potential to emit for lead emissions and particulates have increased over the years (see attachment 3), this source is now considered a non-insignificant source and is operating without a permit. P001 has a baghouse and a scrubber. The baghouse nor the scrubber has pressure drop gauges to indicate if the equipment is working properly. Without a permit application, control efficiency and the maximum process weight rate could not be determined. Since Morgan has yet to supply CLAA with usage, production records or a permit application for P001, PE and lead emissions could not be determined for allowable limits. The actual and potential to emit emissions were taken from attachment 3 and based on material balance data, not true actual emissions. No applicable regulations for lead could be cited for P001.

Inspected by: Valencia White **Date:** 10/13/03

Reviewed by: RDS **Date:** 10/15/03

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EMISSIONS UNIT DETAIL

Identifier: P009
Description: Seven (7) Cleaning Stations and One (1) Vapor Degreaser (VPD-6)

Applicable Restrictions/Limitations
OAC Rule 3745-21-09(O)
40 CFR 63 Subpart T (63.464).

Restricted Category
VOC
MACT

PERMIT STATUS

PTI Number: N/A
Date PTI Issued: N/A
Date PTI App Submitted: N/A
BAT: N/A
Date PTO Issued: N/A
Date PTO Expires: N/A
Date PTO App Submitted: N/A

CONTROL EQUIPMENT

Is Air Pollution Control Equipment (APCE) required?	[Yes]	No	N/A
If YES, is the APCE required to be performance tested?	Yes	[No]	N/A
Were the required APCE reports submitted?	Yes	No	[N/A]
Are the required APCE reports adequate?	Yes	No	[N/A]

List APCE: Refrigerated freeboard chiller and condenser

COMPLIANCE DATA

Does this emissions unit comply with applicable Monitoring, Record Keeping, and Reporting requirements?	Yes	[No]	
Were Visible Emissions Observations Performed?	Yes	No	[N/A]
If not, why?			
Has the source been modified?	Yes	[No]	
Is this emissions unit connected to other emissions units?	Yes	[No]	

List process records required for review: maintenance and repair logs and solvent addition and removal logs
Maximum Process Weight Rate (indicate units): N/A
Monitored Operating Parameter (i.e. pressure drop, temperature, pH): kilograms/m^2/month

Were the required CEM/COM/CAM reports submitted?	Yes	No	[N/A]
Are the required CEM/COM/CAM reports adequate?	Yes	No	[N/A]
Were the required deviation reports submitted?	Yes	No	[N/A]
Are the required deviation reports adequate?	Yes	No	[N/A]
Were any other required reports submitted?	Yes	No	[N/A]
Are any other required reports adequate?	Yes	No	[N/A]

List any other reports required: Morgan does submit a semi-annual report for halogenated solvent cleaning for this emissions unit. The MACT standards require annual solvent reporting.

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COMPLIANCE DATA (CONTINUED)

Emissions Estimates:

Category	Uncontrolled	Actual	Allowable	Potential to Emit
VOC/HAP	0.32 lbs./hr	0.32 lbs./hr	N/A	1.22 tpy
VOC/HAP	0.38 tpy	0.38 tpy	N/A	1.22 tpy

Other Limitations:

VOC/ HAP*	97 kilograms/m^2/month	150 kilograms/m^2/month average

*Note: No emissions limitation was required for this source. The MACT standard has a 3-month rolling average of 150 kilograms/m^2/month, which Morgan has adopted (see facility file).

Category	Actual	Allowable
Visible Emissions	N/A	N/A

CALCULATIONS/EQUATIONS

210.5 gallons added – 154.5 gallons removed = 56 gallons/yr emitted

56 gal./yr * 13.51 lbs./gal. = 756.56 lbs./yr
756.56 lbs./yr * 1 yr/2400 hrs. = 0.315 lbs./hr
756.56 lbs./yr* 1ton /2000 lbs. = 0.378 tpy

Also see attachment 8

GIVENS

Annual operating hours = 2400
Solvent/Air Interface Ratio = 4.31 ft^2
Density of Perc. = 13.51 lbs./gal
Annual Perc. added = 210.5 gallons
Annual Perc. removed = 154.5 gallons

COMPLIANCE EVALUATION

Compliance Determination: Not in Compliance

Comments: Actual and uncontrolled emissions are estimates based on information obtained from the facility for the calendar year July 2002 to July 2003. The potential to emit estimations are in attachment 3. P009 is in violation of operating without a permit. A notice of violation will be issued for this source (see attachment 11).

Inspected by: Valencia White **Date:** 10/13/03

Reviewed by: [signature] **Date:** 10/15/03

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EMISSIONS UNIT DETAIL

Identifier: P019
Description: Degreasing, Poling and Drying (VPD-24)

Applicable Restrictions/Limitations	Restricted Category
OAC Rule 3745-31-05(A)(3)	BAT
OAC Rule 3745-21-09(O)	VOC
40 CFR 63 Subpart T (63.464)	MACT

PERMIT STATUS

PTI Number: N/A **Date PTI Issued:** N/A **Date PTI App Submitted:** N/A

BAT: N/A

Date PTO Issued: 02/17/93 **Date PTO Expires:** 02/16/96 **Date PTO App Submitted:** 02/13/96*

*Morgan submitted a renewal permit application for the Liberty 2002-2-SP Vapor Degreaser. No permit application has been submitted for the Finishing Equipment 6342 Vapor Degreaser.

CONTROL EQUIPMENT

Is Air Pollution Control Equipment (APCE) required?	[Yes]	No	N/A
If YES, is the APCE required to be performance tested?	Yes	[No]	N/A
Were the required APCE reports submitted?	Yes	No	[N/A]
Are the required APCE reports adequate?	Yes	No	[N/A]

List APCE: Refrigerated freeboard chiller and condenser

COMPLIANCE DATA

Does this emissions unit comply with applicable Monitoring, Record Keeping, and Reporting requirements?	Yes	[No]	
Were Visible Emissions Observations Performed?	Yes	No	[N/A]
If not, why?			
Has the source been modified?	[Yes]	No	In July of 1999, P019; Liberty 2002-2-SP vapor degreaser was replaced with Finishing Equipment 6342 vapor degreaser (see attachment 4)
Is this emissions unit connected to other emissions units?	Yes	[No]	

List process records required for review: maintenance and repair logs and solvent addition and removal logs.

Maximum Process Weight Rate (indicate units): N/A

Monitored Operating Parameter (i.e. pressure drop, temperature, pH): kilograms/m^2/month

Were the required CEM/COM/CAM reports submitted?	Yes	No	[N/A]
Are the required CEM/COM/CAM reports adequate?	Yes	No	[N/A]
Were the required deviation reports submitted?	[Yes]	No	N/A
Are the required deviation reports adequate?	[Yes]	No	N/A
Were any other required reports submitted?	Yes	[No]	N/A
Are any other required reports adequate?	Yes	[No]	N/A

List any other reports required: Morgan does submit a semi-annual report for halogenated solvent cleaning for this emissions unit. The MACT standards require annual solvent reporting.

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COMPLIANCE DATA (CONTINUED)

Emissions Estimates:

Category	Uncontrolled	Actual	Allowable	Potential to Emit
VOC/HAP	N/A	N/A	N/A	N/A

Other Limitations:

VOC/ HAP*	786 kilograms/m^2/month	150 kilograms/m^2/month average

*Note: No emissions limitation was required in the expired permit. The MACT standard has a 3-month rolling average of 150 kilograms/m^2/month, which Morgan has adopted (see facility file).

Category	Actual	Allowable
Visible Emissions	N/A	N/A

CALCULATIONS/EQUATIONS

See Attachment 8

GIVENS

Annual operating hours = 2400
Solvent/Air Interface Ratio = 4.38 ft^2
Density of Perc. = 13.51 lbs./gal
Annual Perc. Added = 295.5 gallons
Annual Perc. Removed = 91 gallons

COMPLIANCE EVALUATION

Compliance Determination: Not in Compliance

Comments: No emissions limitations were given in the expired permit for this source. P019 is in violation of operating without a permit (see attachment 11). In July of 1999, Morgan replaced the Liberty 2002-2-SP an existing vapor degreaser for the Finishing Equipment 6342 vapor degreaser without first obtaining a Permit to Install nor resubmitting a Title V application. P019 is also in violation of exceeding the 150 kilograms/m^2/month average emission limitations of 40 CFR 63 Subpart T for the months of March thru June of 2003 (see attachment 8 and 11).

Inspected by: Valencia White **Date:** 10/13/03

Reviewed by: ~~10/15/03~~ AOS **Date:** AOS 10/15/03

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CLEVELAND LOCAL AIR AGENCY FACILITY INSPECTION REPORT

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EMISSIONS UNIT DETAIL

Identifier: P022
Description: Platinum Crucible Cleaning Hood (VPD-35)

Applicable Restrictions/Limitations	Restricted Category
OAC Rule 3745-31-05(A)(3)	BAT
OAC Rule 3745-17-07(A)(1)	Visible Emissions
OAC Rule 3745-17-11(B)	Particulate Emissions

PERMIT STATUS

PTI Number: 13-04048 **Date PTI Issued:** 07/15/03 **Date PTI App Submitted:** 11/05/02

BAT: 0.57 lbs./hr and 0.37 tpy of PE as Hydrochloric Acid mist and 0.37 lbs./hr and 0.24 tpy PE as Nitric Acid mist.

Date PTO Issued: N/A **Date PTO Expires:** N/A **Date PTO App Submitted:** N/A

CONTROL EQUIPMENT

Is Air Pollution Control Equipment (APCE) required?	[Yes]	No	N/A
If YES, is the APCE required to be performance tested?	Yes	[No]	N/A
Were the required APCE reports submitted?	Yes	No	[N/A]
Are the required APCE reports adequate?	Yes	No	[N/A]

List APCE: Condenser

COMPLIANCE DATA

Does this emissions unit comply with applicable Monitoring, Record Keeping, and Reporting requirements?	Yes	No	[N/A*]
Were Visible Emissions Observations Performed?	Yes	[No]	N/A

If not, why? Source has not started up for operation yet.

Has the source been modified?	Yes	[No]	
Is this emissions unit connected to other emissions units?	Yes	[No]	

List process records required for review: # of crucibles cleaned in HCL Acid Bath, operating hours of HCL Acid Bath, # of crucibles cleaned in NO_3 Acid Bath, operating hours of NO_3 Acid Bath and whether or not the condensers were being operated during use of the acid baths.

Maximum Process Weight Rate (indicate units): 54 batches/yr

Monitored Operating Parameter (i.e. pressure drop, temperature, pH): N/A

Were the required CEM/COM/CAM reports submitted?	Yes	No	[N/A]
Are the required CEM/COM/CAM reports adequate?	Yes	No	[N/A]
Were the required deviation reports submitted?	Yes	[No]	N/A
Are the required deviation reports adequate?	Yes	No	[N/A]
Were any other required reports submitted?	Yes	[No]	N/A
Are any other required reports adequate?	Yes	No	[N/A]

List any other reports required: none

EPR

COMPLIANCE DATA (CONTINUED)

Emissions Estimates:

Category	Uncontrolled	Actual	Allowable	Potential to Emit
PE (HCL Acid)	N/A*	N/A*	0.57 lbs./hour	0.57 lbs./hour
PE (HCL Acid)	N/A*	N/A*	0.37 tpy	0.37 tpy
PE (NO_3 Acid)	N/A*	N/A*	0.37 lbs./hour	0.37 lbs./hour
PE (NO_3 Acid)	N/A*	N/A*	0.24 tpy	0.24 tpy

Other Limitations:

Category	Actual	Allowable
Visible Emissions	0*	20%

* Note: No actual or uncontrolled emissions values were obtained since the source was not in operation.

CALCULATIONS/EQUATIONS

N/A

GIVENS

None.

COMPLIANCE EVALUATION

Compliance Determination: Unknown

Comments: This source was not in operation at the time of the inspection. Morgan stated that the source has not been started up since PTI #13-04048 was issued. The actual emissions listed in attachment 3 for P022 was based on material balance data. They are not true actual emissions since the source did not operate in 2002.

Inspected by: Valencia White **Date:** 10/13/03

Reviewed by: VWS **Date:** 10/15/03

EPI

CLEVELAND LOCAL AIR AGENCY
FACILITY INSPECTION REPORT

REVISED: 01/22/03

OhioEPA

DAPC - APPENDIX N

AIR POLLUTION CONTROL EQUIPMENT INFORMATION

APCE Identification:	APCE Type:	APCE Operating?	APCE Adequate?	EUs controlled by APCE:	APCE Observed Parameters:	APCE Parameters Comply?
Technical Glass products	Condenser	Yes [No]	[Yes] No	P022	None	Unknown
Unknown	Wet Scrubber	[Yes] No	[Yes] No	P001	None (No pressure drop gauges on source)	Unknown
Unknown	Baghouse	[Yes] No	[Yes] No	P001	None (No pressure drop gauges on source)	Unknown

Comments:

PERFORMANCE TEST RESULTS

APCE Identification:	Date of Performance Test	Performance Test Observed?	Did the Test Conform to proper methodology?	Pollutants Tested									Test Data:	Test Results:
				PE	OC	VOC	CO	NOX	SO2	Lead	HAPs	Other		
Condenser	N/A*	Yes No	Yes No											Pass Fail
Wet Scrubber	N/A*	Yes No	Yes No											Pass Fail
Baghouse	N/A*	Yes No	Yes No											Pass Fail

Comments: * Performance Test has never been completed on control equipment.

CEM/COM/CAM

Section 3, Part 3

EU ID:	CEM/COM Data to Review	Comply with CEM/COM?	CAM Required?	CAM Plan Requirements:	Comply with CAM?
None	None	Yes No	Yes No		Yes No
		Yes No	Yes No		Yes No
		Yes No	Yes No		Yes No

Comments:

Exhibit #11:

Notice
Of
Violation

City of Cleveland
Jane L. Campbell, Mayor

Department of Public Health
Division of the Environment
1925 St. Clair Avenue
Cleveland, Ohio 44114-2080
216/664-2300
www.city.cleveland.oh.us

SERVING OHIO EPA AS AGENCY 13 FOR CUYAHOGA COUNTY

CERTIFIED MAIL 7002 0510 0002 2427 7843
RETURN RECEIPT REQUESTED

October 10, 2003

William J. Hocevar, PE.
Morgan Electro Ceramics
232 Forbes Road
Bedford, Ohio 44146

NOTICE OF VIOLATION: OPERATING WITHOUT A PERMIT TO INSTALL FOR P001 AND P019, EXCEEDING EMISSIONS LIMITATIONS OF PTI #13-3371 AND 40 CFR 63 SUBPART T, OPERATING WITHOUT TITLE V PERMIT, FAILURE TO SUBMIT FEE EMISSIONS REPORTS SINCE 1996
FACILITY ID: 13-18-03-1627

Dear Mr. Hocevar:

On September 18 and October 6, 2003, the Cleveland Local Air Agency (CLAA) inspected Morgan Electro Ceramics located at 232 Forbes Road in Bedford. This letter serves as notification that you are operating sources in violation of applicable statutes, regulations, or permit conditions. Morgan Electro Ceramics was found to be not in compliance with requirements for filing an application for a Title V permit and submitting Fee Emissions Reporst (FER) and Emission Inventory Summary (EIS) from 2002 to present.

Morgan Electro Ceramics is in violation of the Ohio Administrative Code (OAC) Rule 3745-31-02(A)(1), 3745-77-04 (D), 3745-78-02(A), the Ohio Revised Code (ORC) sections 3704.05(A), (C), (G), ORC section 3745.11(C)(1) and PTI #13-3371 general terms and conditions.

These are the applicable sections of the Ohio Revised Code (ORC) 3704.05:

(A) No person shall cause, permit, or allow emissions of an air contaminant in violation of any rule adopted by the director of environmental protection...

(C) No person who is the holder of a permit issued under division (F) or (G) of section 3704.03 of the Revised Code shall violate any of its terms and conditions.

(G) No person shall violate any order, rule, or determination of the director issued, adopted, or made under this chapter.

OAC Rule 3745-31-02(A)(1) provides the following:

> Except as provided in rule 3745-31-03 of the Administrative Code, no person shall cause, permit or allow the installation of a new source of air pollution... without first obtaining a permit to install from the director.

In 1999, Morgan replaced P019: (VPD-24) Liberty 2002-2-SP Vapor Degreaser with a Finishing Equipment 6342 Vapor Degreaser without first obtaining a permit to install.

In 2002, Morgan replaced the Nyro Spray Dryer of P001, without first obtaining a Permit to Install (PTI). On February 25, 2002, Morgan Electro Ceramics submitted a PTI application for only part of P001. Based on the information submitted to CLAA, on April 3, 2002, CLAA sent Morgan Electro Ceramics a letter stating that P001 was de minimis. On April 8, 2003, Morgan submitted a facility-wide emissions inventory identifying P001 as non-insignificant.

In 2003, Morgan exceeded the three month rolling average emissions limitations outlined in 40 CFR 63 Subpart T and PTI #13-3371 for P019: (VPD-24) Finishing Equipment 6342 Vapor Degreaser and L001: (VPD-34) Baron Blakeslee open top vapor degreaser.

This is the applicable section of the Ohio Administrative Code (OAC) 3745-77-04 (D) requiring a Title V facility to submit a Title V permit application:

> A timely application for a source applying for a Title V permit for the first time, other than a source required to file under paragraph (B) of this rule, is one that is submitted within twelve months after the source becomes subject to the Title V permit program...

Although Morgan Electro Ceramics did file a Title V Permit application, in 1996, they withdrew the application and failed to resubmit the Title V application or pay appropriate Title V fees. This is the applicable section of the OAC 3745-78-02(A) requiring the submission of FER's:

> By June 15, 1994 and April fifteenth of each year thereafter, owners or operators of sources subject to the Title V permit program pursuant to rule 3745-77-02 of the Administrative Code ... must submit, in a form and manner prescribed by the director, a fee emission report that quantifies the actual emission data for particulate matter, sulfur dioxide, organic compounds, nitrogen oxides and lead (but shall not also be considered particulate matter). The owner or operator of a facility shall pay fees on the facility's actual emissions as specified in division (C) of section 3745-11 of the Revised Code.

Since Morgan Electro Ceramics has not filed a Title V Permit application, this is the applicable section of the OAC 3745-15-03 requiring the submission of an Emission Inventory Statement (EIS):

> The director may require the keeping and periodic submission of records and reports, including but not limited to, information on air contaminants, emissions or fuel from any or all potential sources for purposes of maintaining an air

pollution emission inventory or any other reasonable purpose as determined by the director. Such information shall be recorded, compiled, and submitted in a manner and form prescribed by the director.

Since Morgan Electro Ceramics has not filed a Title V Permit application, this is the applicable section of the ORC 3745-11 establishing emission fees:

> (C)(1) Except as otherwise provided in division (C)(2) of this section, beginning July 1, 1994, each person who owns or operates an air contaminant source and who is required to apply for and obtain a Title V permit under section 3704.036 [3704.03.6] of the Revised Code shall pay the fees set forth in division (C)(1) of this section...
>
> The following fees shall be assessed on the total actual emissions from a source in tons per year of the regulated pollutants particulate matter, sulfur dioxide, nitrogen oxides, organic compounds, and lead;...

Morgan Electro Ceramics is in violation of PTI #13-3371 in that the general terms and conditions require Morgan Electro Ceramics to update Title V permit one year after L001: Baron Blakeslee open top vapor degreaser commenced operation. PTI #13-3371 was issued on October 7, 1998. CLAA has yet to receive a Title V applictaion.

Unless you undertake some type of corrective action with respect to the above noted violations, you will remain in non-compliance. CLAA requests that Morgan Electro Ceramics address the above violations and submit the following information within 14 days of your receipt of this letter to the following enforcement representative:

Valencia White
Cleveland Local Air Agency
1925 St. Clair Avenue NE
Cleveland, Ohio 44114

- Ohio EPA Title V application
- Permit to install application for P001 and P019
- A complete process description of P001
- A list of all control equipment connected to P001
- The amount of raw material used in P001 for 2002
- The end product manufactured from P001
- A facility flow diagram

Violations of air pollution laws and /or permit terms and conditions are subject to the penalties stipulated in Ohio Revised Code Section 3704.99(A), which allows fines of not more than twenty-five thousand dollars or imprisonment for not more than one year, or both, for each violation.

Facilities that want to investigate methods of pollution prevention to reduce raw material usage and waste production can contact the Ohio EPA Office of Pollution

EFC

Prevention (OPP). OPP can be contacted at http://www.epa.state.oh.us/opp or (614) 644-3469 and there is no charge for their services.

CLAA issues this letter with Ohio EPA's concurrence and does not excuse any violations of local, state and federal laws or regulations regarding air pollution control. Violations of air pollution control laws may be pursued in local court or referred to Ohio EPA or USEPA for further enforcement action. Should you have any questions, please call Valencia White at (216) 664-2953. All correspondence with CLAA must include the Ohio EPA facility identification number for Morgan Electro Ceramics: 13-18-03-1627.

Sincerely,

George Baker
Chief of Enforcement, CLAA

GB/vw AS

cc: Michael J. Krzywicki, CLAA
Tammy Van Walsen, Ohio EPA Central Office
Lisa Holscher, USEPA Region V
Facility File and L:\Data\Facilities\1318031627\20030918 NOV.doc

Exhibit #12:

Response To Notice Of Violation

Attachments were not included in original EAR
JAT 3/3/04

Morgan
Electro Ceramics

232 Forbes Road
Bedford
Ohio 44146-5418
USA

Tel: (440) 232-8600
Fax: (440) 232-8731
www.morganelectroceramics.com

October 30, 2003

Mr. George Baker
Chief of Enforcement
Cleveland Local Air Agency
1925 St. Clair Avenue NE
Cleveland, OH 44114

Re: **Response to the October 10, 2003 Notice of Violation concerning alleged Ohio Administrative Code and Ohio Revised Code violations for the Morgan Electro Ceramics, Inc. Facility in Bedford, Ohio. Facility ID: 13-18-03-1627.**

Dear Mr. Baker:

On October 20th, 2003 Morgan Electro Ceramics, Inc. received a Notice of Violation (NOV) from the Cleveland Local Air Agency (CLAA), dated October 10, 2003, concerning the Morgan Electro Ceramics facility located at 232 Forbes Road in Bedford, Ohio. This letter and attachments are respectfully submitted by Morgan Electro Ceramics in response to the NOV and the request for information contained within.

Morgan Electro Ceramics thanks CLAA for granting them the opportunity to respond to the alleged violations contained within the NOV and for their willingness to resolve these matters as expeditiously as possible. However, there exists some confusion and potential misinterpretation of the facts in the October 10, 2003 NOV. Accordingly, Morgan Electro Ceramics must take issue with the assertion that their facility is in violation with Ohio Administrative Code (OAC) Rules 3745-31-02(A)(1), 3745-77-04 (D), 3745-78-02(A), the Ohio Revised Code (ORC) 3704.05(A), (C), (G), and ORC Section 3745.11(C)(1).

Compliance Violations Suggested by the October 10, 2003 NOV:

Failure to submit a Permit to Install Application for P019. Page 2, Paragraph No. 1 of the NOV stipulates that *"In 1999, Morgan replaced P019: (VPD-24)) Liberty 2002-2-SP Vapor Degreaser with a Finishing Equipment 6342 Vapor Degreaser without first obtaining a permit to install."*

On February 9, 1999 Morgan Electro Ceramics submitted a letter to Ms. Jane Bell, Cleveland Air Pollution Control. The letter was submitted after a telephone conversation with Ms. Jane Bell regarding the replacement of a vapor degreaser and associated air pollution control equipment for the emission unit P019. A copy of the letter is attached as Attachment A. The letter explains that Morgan Electro Ceramics was planning on replacing the existing vapor degreaser (P019) with a vapor degreaser of similar (lesser) size and the same or greater level of air pollution control equipment. The letter further explained that the unit will be used in the same capacity, occupy the same building area as the existing vapor degreaser, would not result in an increase in emissions and therefore would not be considered a "modification", as defined in OAC 3745-31-01(MM) *(Currently 3745-31-01 (AAA))*. Based on this determination that the replacement equipment would not be considered a "modification", the existing

permitted source would not be required to submit a Permit to Install application. At that time, Mr. Matt Kupcak, a consultant with Temco Associates Corporation, had a telephone conversation with Ms. Bell in which Ms. Bell stated that she agreed with this interpretation. Ms. Bell noted that ultimately it was Morgan Electro Ceramics' responsibility to make this determination and that she did not feel that a written response was warranted.

Based on the OAC definition of "modification" at the time of the replacement of the existing vapor degreaser (P019) Morgan Electro Ceramics was not required to submit a permit to install application for P019. Furthermore, Morgan Electro Ceramics notified the Local Air Pollution Control Agency of this determination and obtained agreement from their office that a permit to install application was not required. Therefore, a permit to install application was not and is not required for P019 and as such, Morgan Electro Ceramics has not attached a permit to install application for P019 with this letter submittal, as requested in your October 10, 2003 NOV.

Failure to submit a Permit to Install Application for P001. It is unclear in your NOV why your office is requesting Morgan Electro Ceramics to submit a Permit to Install application for P001. Morgan Electro Ceramics would like to set forth the facts in this letter to demonstrate why it that P001 does not require submission of a PTI application. Page 2, Paragraph No. 2 of the NOV states that, *"In 2002, Morgan replaced the Nyro Spray Dryer of P001, without first obtaining a permit to install (PTI). On February 25, 2002, Morgan Electro Ceramics submitted a PTI application for only part of P001. Based on the information submitted to CLAA, on April 3, 2002, CLAA sent Morgan Electro Ceramics a letter stating that P001 was de minimis. On April 8, 2003, Morgan submitted a facility-wide emissions inventory identifying P001 as non-insignificant."*

As a point of clarification, Morgan Electro Ceramics did not replace the Nyro Spray Dryer of P001. Morgan Electro Ceramics replaced the existing cyclone and wet scrubber with a new cyclone and a pulse-jet baghouse. Complete permit to install and operate applications for P001 were originally submitted to the Local Air Pollution Control Agency in 1975 and a registration status permit was issued on 9/15/75. The registration status permit was a combination of mixers, a spray dryer and an electric ceramic kiln. Information relating to the permit history of P001, including letters of registration, status notification, Appendix A (process information) from the permit applications and a process flow diagram submitted with each permit renewal application is included as Attachment B. During the entire historical operation of this emission unit, no modifications have been made which resulted in the increase of any air pollutant emitted or the emission of any air pollutant not covered by the registration status permit. Since 1975, this application for renewal has been re-submitted to the Local Air Pollution Control Agency in 1978, 1980, 1983, 1986, 1989, 1992 and again in 2002.

On January 28, 2002, Morgan Electro Ceramics submitted a PTI application and cover letter to Mr. David Hearne of the Cleveland Air Pollution Control Agency. A copy of this cover letter is included as Attachment C. The cover letter explained to Mr. Hearne that the Nyro Spray Dryer was covered under a registration status permit and that Morgan Electro Ceramics was planning on replacing certain air pollution control equipment that might be considered a "modification" under OAC 3745-31-01 (AAA). The letter requested the Nyro Spray Dryer be removed from the registration status permit and the enclosed permit to install application be processed for the Nyro Spray Dryer.

After receipt and review of the PTI application package, Mr. David Purchanski with the Cleveland Bureau of Air Pollution Control telephoned Mr. Matt Kupcak, consultant for Morgan Electro Ceramics, and explained that the Bureau did not believe that the replacement of the air pollution control equipment

met the definition of a "modification" and that the Nyro Spray Dryer and P001 in general met the definition of a "de minimis" exemption per OAC 3745-15-05 and were therefore exempt from obtaining state permits. On April 3, 2002, Mr. Purchanski submitted a letter to Morgan Electro Ceramics explaining the position of the Bureau that P001 and specifically the modifications to the Nyro spray dryer did not require state permits. He also returned the unprocessed permit to install application that Morgan Electro Ceramics had submitted to the Bureau. A copy of this letter is attached as Attachment D.

Morgan Electro Ceramics relied upon this information and installed the air pollution control equipment without obtaining a permit to install and/or operate. Additionally, Morgan Electro Ceramics replaced similar air pollution control equipment on the mixing operations of registration status source P001. Morgan Electro Ceramics relied on the previous determination by the Cleveland Bureau of Air Pollution Control in determining that replacing an existing wet scrubber with a new wet scrubber did not meet the definition of a modification and the emission unit (P001) should be considered a "de minimis" source.

Based on this information, Morgan Electro Ceramics asserts that the operation of P001 has been reviewed by the Ohio EPA Central office at least 7 times dating back to 1975 and by the Cleveland Local Air Pollution Control Agency at least 8 times, the last time occurring in February 2002. Each office has consistently and independently viewed P001 as a "de minimis" source, which would not need a state operating permit. As repeatedly agreed to by both the Ohio EPA Central Office and the Cleveland Local Air Pollution Control Agency, source P001 is classified as a "de minimis" source and therefore is not required to submit and/or obtain a state operating permit. Based on this information, Morgan Electro Ceramics does not believe that submittal of a permit to install application for P001 is warranted and has not included one with this letter submittal, as requested in the October 10, 2003 NOV..

Morgan Electro Ceramics did submit a facility-wide emission inventory on April 8, 2003 identifying P001 as non-insignificant. The basis for the designation of P001 as "non-insignificant" was the uncontrolled potential to emit calculation for the Nyro Spray dryer. The uncontrolled emissions from the Nyro Spray dryer were evaluated prior to the above discussed replacement of air pollution control equipment on the Nyro spray dryer. Based on the results of this evaluation by a consultant, the above mentioned permit to install application and a request for specific limits to the source maintaining them below Title V thresholds was submitted to the Local Air Pollution Control Agency. When the determination from the Cleveland Bureau of Air Pollution was returned to the facility on April 3, 2003 stating that the source was a "de minimis" source which did not need a state operating permit, the facility modified the emission inventory calculation and P001 was physically designated again as "Insignificant". The unrevised emission inventory, incorrectly identifying P001 as "significant", was submitted as an oversight. A revised emission inventory, relying upon the direction of the Cleveland Bureau of Air Pollution Control and the Ohio EPA central office and correctly classifying P001 as "Insignificant" is attached as Attachment E.

Failure to submit an Ohio EPA Title V Application and pay associated Title V Fees. The basis for these claims is founded in two assertions. The first being found on page 2, paragraph 5, "*Although Morgan Electro Ceramics did file a Title V Permit application, in 1996, they withdrew the application and failed to resubmit the Title V application or pay appropriate Title V fees.*"

In September of 1996, Morgan Electro Ceramics electronically submitted a Title V Application (Control No. 000003531) for their Bedford, Ohio facility. The submission was intended to serve as a complete facility Permit to Operate application requesting federally enforceable limitations on the facility's perchloroethylene usage. During the permit review process and subsequent requests for additional

information from the Cleveland Local Air Pollution Control Agency, Morgan Electro Ceramics became aware of the fact that facility perchloroethylene usage had been reduced to the point that actual and potential emissions of perchloroethylene were below the major source thresholds, therefore nullifying the requirement for a federally enforceable facility state operating permit. Based on this information a letter was sent to Mr. Ed Fasko with the Cleveland Air Pollution Control Agency on February 6, 1998, requesting that the application submittal (Control No. 000003531) be removed from the STARShip database and all paperwork related to this application be returned to the Bedford facility. The letter went on to explain how a combination of more sophisticated emission estimates and engineering and operational changes resulted in the facility's actual and potential emissions of perchloroethylene being far below the major source threshold. The letter also included emissions summary tables for calendar years 1996 and 1997 and a completed and signed Title V Applicability Questionnaire. A copy of this letter is attached as Attachment F.

On February 18, 1998 Morgan Electro Ceramics received a letter from Ms. Jane Bell, with the Cleveland Air Pollution Control Agency stating that they had received the letter and were taking the necessary steps to withdraw the application from their system and that a copy of the information had been forwarded to Ohio EPA Central Office for withdrawal from their systems. A copy of the letter is attached as Attachment G. Since that time Morgan Electro Ceramics has paid and continues to pay the fees associated with a non-title V source. Additionally, Morgan Electro Ceramics has and continues to submit a facility-wide emission inventory. Based on the continued emission inventories conducted and the most recent one (attached as Attachment E), the facility is NOT a major source of emissions of any criteria or hazardous air pollutants and therefore is NOT required to submit a Title V Permit Application or obtain a Title V Operating permit for the facility. Additionally, as the facility is not part of the Title V Operating Permit Program, the facility does not need to pay Title V fees.

The second assertion that Morgan Electro Ceramics must submit a Title V permit application comes from the statement on page 3, paragraph 2, that Morgan Electro Ceramics is in violation of the General Terms and Conditions for PTI #13-3371. The reference of these General Terms and Conditions being to OAC 3745-77-04(D), which requires, "*A timely application for a source applying for a Title V permit for the first time, other than a source required to file under paragraph (B) of this rule, is one that is submitted within twelve months after the source becomes subject to the Title V permit program...*"

Morgan Electro Ceramics has and will continue to conduct annual emissions inventories to determine their major source status. Morgan Electro Ceramics is aware of the requirements for submitting and obtaining permits to install and permits to operate for certain new sources and modifications to existing ones. As described above and demonstrated in Attachment E, Morgan Electro Ceramics is NOT a major source of emissions of criteria or hazardous air pollutants and as such, is NOT subject to the Title V permit program. Therefore, Morgan Electro Ceramics is not required to submit a Title V permit application and has not included one with this submission, as requested in the October 10, 2003 NOV.

Exceedance of the three month rolling average emission limitations for sources P019 and L001. (Page 2, Paragraph 3). Morgan Electro Ceramics agrees with the statement that they have exceeded the 3-month rolling average emissions limitations outlined in the permits-to-operate and 40 CFR 63 Subpart T. The permit terms and conditions require Morgan Electro Ceramics to track their emissions and report exceedances on a quarterly basis. Morgan Electro Ceramics is aware of this situation and has prepared and submitted in the required time frames the required reports to the appropriate agencies. Additionally, Morgan Electro Ceramics has initiated a root cause investigation of the reasons for the emission

excursions and has taken the necessary steps to ensure the vapor degreasers do not exceed their emission limitations in the future.

Request for Information

The October 10, 2003 Notice of Violation has specifically requested Morgan Electro Ceramics prepare and submit certain information to your office. Morgan Electro Ceramics has reviewed this request for information carefully and has included the following information with this submittal.

- A complete process description for P001 is included with Attachment B. Attachment B includes information relating to the permit history of P001; including letters of registration status notification, Appendix A (process information) from the permit applications and a process flow diagram. This is the same information that has been submitted to your office during the entire historical operation of this emission unit. With the exception of the replacement of the control equipment described previously in this letter, this emission unit (P001) has remained unchanged since the original permit application was submitted in 1975.

- A complete list of all air pollution control equipment associated with P001 is included in Attachment H.

- Raw material usage for P001for calendar year 2002 is included in Attachment I.

- The end product manufactured from P001 is piezoelectric ceramic prepared for high firing as stated in Appendix A of Attachment B.

- A facility flow diagram is included in Attachment J.

The request for a complete permit to install application for sources P001 and P019 are not included with this letter submittal. Morgan Electro Ceramics has described in detail the reason(s) that we do not believe P001 and P019 require permit to install applications. At this time, it would require substantial effort and expense on the behalf of Morgan Electro Ceramics to provide this information to your office and we would respectfully request additional information as to why this information is pertinent before preparing and submitting such information. It is also unclear as to why your office requested such documents and did not request Morgan Electro Ceramics to submit requested applications to the appropriate permitting authority.

The request for a complete Title V permit application for the facility is not included with this letter submittal. Morgan Electro Ceramics has described in detail the reason(s) that we do not believe the facility is subject to the Title V Permit program and as such does not need to submit a Title V permit application. At this time, it would require substantial effort and expense on the behalf of Morgan Electro Ceramics to provide this information to your office and we would respectfully request additional information as to why this information is pertinent before preparing and submitting such information. Additionally, Morgan Electro Ceramics asserts that fourteen (14) days is not sufficient time to prepare a complete Title V permit application. It is also unclear as to why your office requested these documents sent to them and did not request Morgan Electro Ceramics to electronically submit the requested Title V permit application to the Ohio EPA Central office and copy the Cleveland Local Air Agency.

While Morgan Electro Ceramics would like to resolve this matter as expeditiously and appropriately as possible, due to the inaccuracies and misinterpretations contained in your October 10, 2003 Notice of Violation, which have been described above, Morgan Electro Ceramics respectfully requests that your office review this submittal carefully and contact Mr. William Hocevar at (440) 232-8600, as soon as reasonably possible to discuss any remaining questions or concerns that you may have regarding these issues. After any questions regarding this NOV have been resolved, Morgan Electro Ceramics respectfully requests that your office withdraw the NOV and notify Morgan Electro Ceramics in written form reflecting the compliance status of the facility.

Thank you for your consideration in this matter and we look forward to your response.

Sincerely,

William J. Hocevar, Facility Manager – Morgan Electro Ceramics, Inc.

cc: Peter Morten, President - Morgan Electro Ceramics, Inc.
Mike Wentzel, Corporate EH & S Manager - Morgan Advanced Ceramics
Al Metcalfe, Production Manager - Morgan Electro Ceramic, Inc.
Matt Kupcak - KMK Environmental, Inc.
Valencia White - CLAA
Tammy Van Walsen - Ohio EPA Central Office

ATTACHMENT A

COPY OF FEBRUARY 9, 1999 LETTER TO MS. JANE BELL, CLEVELAND AIR POLLUTION CONTROL.

E-94
A-1

Morgan Matroc, Inc.

Electro Ceramics Division

232 Forbes Road
Bedford Ohio 44146 USA
Telephone (440) 232 8600
FAX (440) 232 8731

MATROC
Leaders in ceramic technology

February 9, 1999

Ms. Jane Bell
Air Quality Engineer
Cleveland Air Pollution Control
1925 St. Clair Avenue
Cleveland, OH 44114

RE: Replacement of Ohio EPA Source No. P019 for Morgan Matroc, Inc., Bedford, Ohio facility.

Dear Ms. Bell:

Pursuant to your recommendation, Morgan Matroc, Inc. respectfully is petitioning your office for a determination of the necessity to obtain a permit to install for the replacement of Ohio EPA Source No. P019 (solvent vapor degreaser) with a solvent vapor degreaser of lesser size and similar unit controls at the Morgan Matroc, Inc., Bedford, Ohio facility.

The existing air contaminant source (Ohio EPA P019) is a solvent vapor degreaser utilizing perchloroethylene. The solvent machine has a solvent/air interface area of 5.0 square feet. The P019 employs the following controls: (1) freeboard ratio of 1.00; (2) freeboard refrigeration device; (3) working-mode cover; (4) safety vapor control; and (5) low and high-level temperature controls. The replacement unit will contain the same or greater level of control as the existing degreaser. The replacement unit will also use perchloroethylene, have a solvent/air interface area of 4.4 square feet and be utilized in the same capacity and occupy the same building area as the existing one.

Based on the design of the replacement degreaser, Morgan Matroc, Inc. believes that its use will not result in an increase in perchloroethylene emissions and is essentially a " replacement in kind". Therefore, it is Morgan Matroc, Inc.'s contention that the replacement does not meet the definition of a "modification", as defined in Chapter 3745-31-01 (MM) of the Ohio Administrative Code and as such, is not required to submit a permit to install application and will by determination assume the terms and conditions of the existing Permit to Operate for P019.

Morgan Matroc, Inc. wishes to proceed with replacement of the existing degreaser as soon as possible and appreciates your time and consideration in this matter. If you have any questions regarding this correspondence, please contact Mr. Matt Kupcak of Tempo Associates Corporation, at (330) 935-30000 or (330) 352-5823.

Sincerely,

William Hocevar, P.E.
Morgan Matroc, Inc.

Cc: Matt Kupcak, Temco Associates Corporation
Doug Mehls, Morgan Matroc, Inc.

ISO 9002 QMI REGISTERED QUALITY SYSTEM

E-94
A-2

Morgan

ATTACHMENT B

HISTORICAL PERMIT HISTORY OF P001

E-94
B-1

Process Description of P001

The initial step in the powder process is the precise weighing of raw oxides according to proprietary formulations. To assure complete mixing of raw materials, raw oxides are wet blended using de-ionized water in a high shear mixer. After mixing, the slip is pumped into drying pans and the de-ionized water vehicle is removed via oven drying at ~130°C. The dried cake is crushed, providing a more uniform granule size, for uniform thermal transport during calcining. Calcining is performed in a furnace, at temperatures between 900 and 1100°C, to react the raw oxides into an intermediate stage compound that exhibits the desired chemical stoichiometry and crystalline structure of the finished ceramic.

The calcined material is then milled in de-ionized water to a determined particle size specification; generating a fine particle size and large surface area is critical to providing adequate driving forces (mass, vapor transport reactions) for achieving densification during the sintering process. A variety of ceramic shapes are produced in the manufacturing operation. The free-flowing powders required for the forming steps are generated by spray drying. After milling is completed, organic additives to give flow and strength characteristics are added to the slip. The material is then pumped into a heated air stream in the dryer chamber to remove the de-ionized water and produce spherical granules with desired physical characteristics.

E-94
B-2

OHIO ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO INSTALL

2089

FOR OFFICE USE ONLY

PTI No. B-3971

Date Received 2/25/02

Read all instructions carefully before filling out this application (See the line-by-line instructions on page 15). Please also be aware that it may take 2 to 6 months or more to obtain a final permit to install. Construction of a new source cannot begin until a final permit to install is obtained.

Morgan Electro Ceramics, Inc.
1 Applicant Name

William J. Hocevar, P.E.
9 Primary Facility Contact

Morgan Electro Ceramics, Inc.
2 Facility Name

(440) 232-8600
10 Contact Phone Number

232 Forbes Road
3 Facility Address (Street)

Same as above.
11 Contact Mailing Address (Street)

Bedford
4 City, Township, or Village (Circle)

N/A
12 Mail Drop/Attention (if applicable)

Cuyahoga
5 County

44146-5476
6 Zip Code

Bedford
13 City/Township

Ohio
14 State

13-18031627
7 OEPA Air Facility ID# (10-digit)

44146-5476
15 Zip Code

3999
8 Facility Primary Standard Industrial Code

Existing source located in Powder Prep Room of facility.
16 Description of the Proposed Location of the Facility

Facility is modifying existing source (Nyro Spray Dryer-P001)

17 Name of new or modified source or facility

PZT ceramic powder

18 Product of new or modified source/facility

Under OAC 3745-31-04, these signatures shall constitute personal affirmation that all statements or assertions of fact made in the application are true and complete, comply fully with applicable state requirements, and shall subject the signatory to liability under applicable state laws' forbidding false or misleading statements.

Peter Morton — Date: 2/22/02
19 Authorized Signature (for facility)

President
20 Title

232 Forbes Road, Bedford, Ohio 44146-5476
21 Address (Street, City/Township, State and Zip Code)

RECEIVED
FEB 25
DIVISION OF AIR POLLUTION CONTROL

For Wastewater Treatment Plants complete the following.
Not Applicable — Date:
22 Signature of General Contractor or Agent performing installation, if selected.

23 Company

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Permit to Install Emissions Unit Information Form

One copy of this form should be filled out for each air pollution emissions unit covered by this permit to install application. Instructions for this form can be found starting on page 15 of the permit to install application package.

25. OEPA Emissions Unit ID (4 digit number): P001

26. Company ID for Emissions Unit: Nyro Spray Dryer

27. Emissions Unit Activity Description: PZT slurry is pumped into spray dryer where it is dried in a combustion process. The dried powder is gravity fed onto a screen deck where it is separated by particle size. The fines from the spray-drying process are controlled by a cyclone and a pulse-jet baghouse. Material captured by the cyclone is used in rework powder lots or is used for producing sheet stock.

* Emission unit is being modified to remove existing lower efficiency cyclone and wet scrubber and replace with high efficiency cyclone and pulse-jet baghouse.

28. Equipment Description: Nyro spray dryer, screen deck, product hopper, cyclone and pulse-jet baghouse.

29. Construction/Modification/Emissions Testing Schedule

	DATE
Equipment Ordered (month/year)	02/02
Commence Construction Date (month/year)	05/02
Initial Startup Date (month/year)	06/02
Most Recent Modification Date (if applicable) (as defined in OAC rule 3745-31-01(j)):	N/A
Performance Testing	N/A

30. Emissions Information:

Complete the following table for each criteria air pollutant proposed to be emitted from the emissions unit at a rate greater than the deminimus amounts (list each pollutant on a separate line), and for any pollutant for which an emissions limit has been established (per a state or federal regulation or Permit to Install) which limits air emissions of the pollutant.

Pollutant Name	Proposed Maximum Hourly Emission (lb/hr)	Proposed Maximum Yearly Emission (Tons/year)
PM	0.02 lbs/hr	0.09 tons/yr
Lead	0.013 lbs/hr	0.057 tons/yr

Detailed emission calculations are attached to application as Table 1 and Table 2.

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1. Proposed Operating Schedule:

	Hours Per Day	Hours per Year
Average	24	6000
Maximum	24	8760

32. Add-on Control Equipment Information:
Does this emissions unit employ add-on emissions control equipment? ☒ yes ☐ no
If your answer is yes, then fill out the table below. If your answer is no, then proceed to item # 33.

Control Equipment Type Codes:

A. Fabric filter/Baghouse	E. Flare	I. Concentrator
B. Electrostatic Precipitator	F. Wet Scrubber	J. Cyclone/Multiclone
C. Catalytic Incinerator	G. Condenser	K. Settling Chamber
D. Thermal Incinerator	H. Carbon Adsorber	L. Other, describe

Item	Control Device #1	Control Device #2	Control Device #3
Type (See Above Codes)	J	A	
Configuration			
Manufacturer's Name	Sly, Inc.	Sly, Inc.	
Company ID	Model T2	Model STJ-66-8	
Month/Year Installed	05/01/02	05/01/02	
Pollutant(s) Controlled	PM, Lead	PM, Lead	
Operating Capture Efficiency (%)	100%	100%	
Average Design Control Efficiency(%)	>90%	>99%	
Operating Control Efficiency(%)	>90%	>99%	
Inlet Gas Flow (acfm)	1,400	1,400	
Inlet Gas Temperature (°F)	150-245	100-200	
Maximum Controlled Emission Rate for Each Pollutant controlled (lb/hr, grain/dscf or ppmv)	PM = 2.00 lb/hr Pb = 1.11 lb/hr	PM = 0.02 lb/hr Pb = 0.013 lb/hr	

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Supplemental control device information (see instructions)

Control Device #1 Type - Cyclone

Control Device #2 Operating pressure drop range (14" WG +/- 6"); pressure type (negative); fabric cleaning mechanism (pulse-jet)

Control Device #3

33. Attach a Process or Activity Flow Diagram to this application for each emissions unit included in the application. Please see the instructions on page 17.

Process Flow Diagram attached.

34. Emissions egress point(s) information: (Provide the following information for each point at which emissions are released into the ambient air from the emissions unit. List each individual egress point on a separate line):

Egress point type codes:

A. vertical stack (unobstructed)
B. horizontal/downward stack
C. vertical stack (obstructed)
D. fugitive

Egress Point Information

Company ID for Egress Point	Type Code	Egress Point Shape (ft)	Egress Height (ft)	Temp (F)	Flow (ACFM)	GEP Building Height (ft)	GEP Building Length (ft)
		Diameter		Maximum	Maximum		
VPD-32B	A	1.0	36.0	240	1,400	32.0	200'
				Average	Average		
				120	1,400		

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EMISSIONS UNIT EGRESS POINT LOCATION INFORMATION

Company ID for Egress Point	UTM Zone (16 or 17)	UTM Easting (5 digit) (m)	UTM Northing (7 digit) (m)	Base Elevation (ft)	Minimum Fenceline Distance (ft)

This section is not applicable due to the fact that the modification to the source does not result in an increase to previously permitted allowable emissions. Therefore, there is no incremental increase in air emissions and air toxics screening modeling is not required.

35. Are you applying, per OAC rule 3745-35-07, for federally enforceable limits as part of this permit issuance? ☐ yes ☒ no. However, the facility expects to have federally enforceable limits as part of their PTO.

See attached letter requesting proposed federally enforceable operational and emission limits for the emission source.

36. Are you requesting any information included in this application for this emissions unit is being claimed as a trade secret per Ohio Revised Code (ORC) 3704.08?
☐ yes ☒ no

37. Does this emissions unit utilize any continuous emissions monitoring equipment? If so, complete the following table. **Not Applicable**

Company ID for Egress Point	Type of Monitor	Manufacturer/ Model Number	Serial Number	Pollutant(s) Monitored

38. The appropriate Emissions Activity Category (EAC) form(s) must be completed and attached for each emissions unit. At least one complete EAC form must be submitted for each emission unit for the application to be considered complete.

Process Operations EAC Form 3100 - Process Operations is attached.

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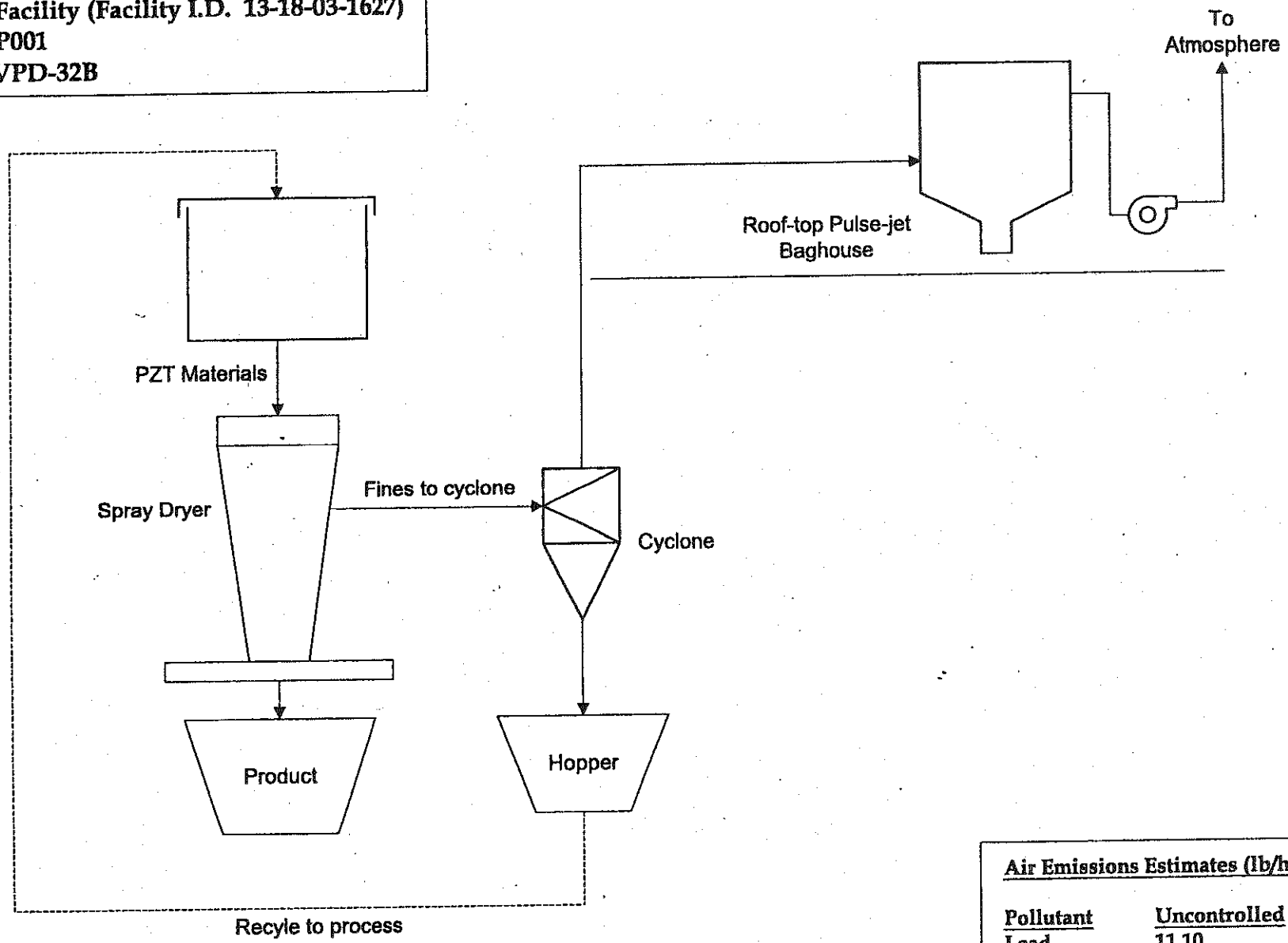
Morgan [illegible]c, Inc. Electro Ceramics Div.
Bedford, Ohio Facility (Facility I.D. 13-18-03-1627)
Ohio EPA ID: P001
Company ID: VPD-32B



Air Emissions Estimates (lb/hr)

Pollutant	Uncontrolled	Controlled
Lead	11.10	0.011
PM	17.02	0.017

Emission Egress Point Information

Stack Diam.	1.0	feet
Stack Temp. =	115	farenheit
Stack velocity =	1400	acfm

Drawing Not To Scale

Table 1, Morgan Electro Ceramics, Inc. - P001 Spray Dryer Modification
Particulate Matter (PM) Emissions

PM Emissions - Uncontrolled

	A	B	C	D	E	F	G	I
Mill Size*	Cycle Time (hrs.)	Initial Batch Weight (lbs.)	Product Weight (lbs.)	Handling Losses** (lbs.)	Cyclone PM Recycle (lbs.)	PM Loading to Cyclone (lbs.)	Uncontrolled Emissions (lb/hr)	Uncontrolled Emissions*** PTE (tpy)
Large	19.9	4838.3	3686.0	96.8	944.00	1055.51	5.60	24.52
Medium	5.9	1097.5	807.0	22.0	214.50	268.55	9.20	40.30
Small	1.4	255.0	165.5	5.1	61.00	84.40	17.02	74.54

139.36

PM Emissions - Controlled

	J	K	L	M	N
Mill Size*	Uncontrolled Emissions (lb/hr)	Controlled Cyclone**** (lb/hr)	Controlled Cyclone PTE (tpy)	Controlled Baghouse (lb/hr)	Controlled Baghouse PTE (tpy)
Large	5.60	0.56	2.45	0.006	0.02
Medium	9.20	0.92	4.03	0.009	0.04
Small	17.02	1.70	7.45	0.017	0.07

0.13

Notes:

* Average production run sizes.

** Material handling losses are estimated to be 2% of the initial batch weight.

*** PTE (Potential to Emit) is based on 8,760 operating hours.

**** Cyclone efficiency estimated at 90%.

***** Baghouse efficiency estimated at 99%. Cyclone is primary control and baghouse is secondary control device.

Calculations:

Column F:	PM Loading to Cylcone (lb) =	Column B - Column C - Column D
Column G:	Uncontrolled Emissions (lb/hr) =	(Column F - Column E) / Column A
Column K:	Controlled Cyclone Emissions (lb/hr) =	Column J * 0.10 (90% Cylcone efficiency)
Column M:	Controlled Baghouse Emissions (lb/hr) =	Column K * 0.01 (99% Baghouse efficiency)

Table 2. Morgan Electro Ceramics, Inc. - P001 Spray Dryer Modification
Lead Emissions

Lead (Pb) Emissions - Uncontrolled

	A	B	C	D	E	F	G	I
Mill Size*	Cycle Time (hrs.)	Initial Batch Weight (lbs.)	Product Weight (lbs.)	Handling Losses** (lbs.)	Cyclone Pb Recycle*** (lbs.)	Pb Loading to Cyclone (lbs.)	Uncontrolled Pb Emissions (lb/hr)	Uncontrolled Emissions**** PTE (tpy)
Large	19.92	4838.3	3686.0	96.8	613.6	686.08	3.64	15.94
Medium	5.88	1097.5	807.0	22.0	139.4	174.56	5.98	26.19
Small	1.38	255.0	165.5	5.1	39.7	54.86	11.06	48.45

9 0,58

Lead Emissions - Controlled

	J	K	L	M	N
Mill Size*	Uncontrolled Emissions (lb/hr)	Controlled Cyclone**** (lb/hr)	Controlled Cyclone PTE (tpy)	Controlled Baghouse (lb/hr)	Controlled Baghouse PTE (tpy)
Large	3.64	0.36	1.59	0.004	0.02
Medium	5.98	0.60	2.62	0.006	0.03
Small	11.06	1.11	4.85	0.011	0.05

0,1 0

Notes:

* Average production run sizes.

** Material handling losses are estimated to be 2% of the initial batch weight.

*** Lead compounds make up 65% of the total PM in product mix.

*** PTE (Potential to Emit) is based on 8,760 operating hours.

**** Cyclone efficiency estimated at 90%.

***** Baghouse efficiency estimated at 99%. Cyclone is primary control and baghouse is secondary control device.

Calculations:

Column F: Pb Loading to Cylcone (lb) = Column B - Column C - Column D

Column G: Uncontrolled Emissions (lb/hr) = (Column F - Column E) / Column A

Column K: Controlled Cyclone Emissions (lb/hr) = Column J * 0.10 (90% Cylcone efficiency)

Column M: Controlled Baghouse Emissions (lb/hr) = Column K * 0.01 (99% Baghouse efficiency)

B-10 C-9X

OhioEPA
State of Ohio Environmental Protection Agency

Facility Name: Morgan Electro Ceramics, Inc.
Facility ID: 13-18-03-1627
Title: EAC P001

Process Operations

1. General end product(s) of this process: Dried and sized PZT ceramic powder.

2. Process hourly production rates

		Units:
Average production:	150.00	lb/hr
Maximum production:	200.00	lb/hr

3.

		Units:
Process projected maximum annual production:	1,000,000.00	lb
Process actual annual production:	850,000.00	lb

4. Type of operation:

- ○ Continuous
- ● Batch

5. Identify all products generated by this process and associated cycle time information (if applicable):

Product
Dry calcined ceramic powder.

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Facility Name: Morgan Electro Ceramics, Inc.
Facility ID: 13-18-03-1627
Title: EAC P001

6. Identify all materials used in process at maximum production rate and complete requested information :

Product	Raw Material
Dry calcined ceramic powder.	Lead Oxide
Dry calcined ceramic powder.	Titanium Dioxide
Dry calcined ceramic powder.	Water
Dry calcined ceramic powder.	Zirconium Dioxide

Product	Principal Use
Dry calcined ceramic powder.	Powder additive
Dry calcined ceramic powder.	Powder additive
Dry calcined ceramic powder.	Binder
Dry calcined ceramic powder.	Powder additive

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OhioEPA
State of Ohio Environmental Protection Agency
P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149
(614) 644-3020
FAX (614) 644-2329

20 1992

George V. Voinovich
Governor

1318031627
MORGAN MATROC VERNITRON DIV.
JAMES MOUSSEAU
232 FORBES ROAD
BEDFORD OH 44146

July 16, 1992

This letter is to notify you that the application(s) you submitted for permit(s) to operate the air contaminant source(s) as described on the attached notice(s) have been reviewed by the Ohio EPA.

The emission potential of the source(s) is of an amount and type that are considered minimal by the Ohio EPA. Consequently, the Ohio EPA staff has recommended to the Director that the source(s) be placed on registration status. This means that the source is placed in the computer file and the emissions are made a part of the permanent record. However, no permit issuance fee is required and you do not need to renew the permit every three years. The fifteen dollar ($15) application fee supported the application review and this fee is non-refundable.

This action does not affect your legal obligation to comply with all applicable state and federal regulations including emission regulations. Also, this action in no way precludes the Director's option of requiring a permit to operate these sources(s) at some future date.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency and the Environmental Law Division of the Office of the Attorney General within three (3) days of filing with the Board. An appeal may be filed with the Environmental Board of Review at the following:

Environmental Board of Review
236 East Town Street, Room 300
Columbus, Ohio 43215

Very truly yours,

Thomas G. Rigo

Thomas G. Rigo, Manager
Field Operations and Permit Section
Division of Air Pollution Control

TGR/tkb

EPA-3168

E-94
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NOTICE OF REGISTRATION

TO:
MORGAN MATROC VERNITRON DIV.
232 FORBES ROAD
BEDFORD OHIO 44146

FOR:

APPLICATION NO	1318031627 P001
EQUIPMENT DESCRIPTION	PIT MIXERS-SPRAY-DRYER & KILN
COMPANY ID	C-1416 BICKLEY CERAMIC BISQUE KILN, PIT CERAM
ISSUE DATE	07/16/92
EFFECTIVE DATE	07/16/92

(SEE ENCLOSED LETTER FOR EXPLANATION)

Donald R Schregardus

DIRECTOR

E-94
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OHIO ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR A PERMIT TO OPERATE
AN AIR CONTAMINANT SOURCE

APS APPL NO _____
DATE RECEIVED _____

Morgan Matroc-Vernitron Division	James Mousseau
Facility Name	Person to Contact
232 Forbes Road	232 Forbes Road
Facility Address	Mailing Address
Bedford, Cuyahoga, 44146	Bedford, Ohio, 44146
City, County, Zip	City, State, Zip
(216) 232-8600	(216) 232-8600
Telephone Area Number	Telephone Area Number
1318031627 P001	3679
(Application No., if this is a renewal application)	Standard Industrial Classification Code

1. Complete and attach any of the following appendices most appropriate to the air contaminant source. In addition, a compliance time schedule form is to be attached when applicable. Check as appropriate the following:

- [X] Appendix A, Process
- [ ] Appendix B, Fuel-Burning Equipment
- [ ] Appendix C, Incinerator
- [ ] Appendix D, Surface Coating or Printing Operation
- [ ] Appendix E, Storage Tank
- [ ] Appendix H, Gasoline Dispensing Facility
- [ ] Appendix J, Loading Rack at Bulk Gasoline Plant or Terminal
- [ ] Appendix K, Surface Coating Line or Printing Line
- [ ] Appendix L, Solvent Metal Cleaning
- [ ] Appendix M, Fugitive Dust Emission Sources _____ (Specify Appendix No.)
- [ ] Appendix N, Rubber Tire Manufacturing
- [ ] Appendix O, Dry Cleaning Facility
- [ ] Appendix P, Synthesized Pharmaceutical Manufacturing
- [ ] Other Appendix _____
- [ ] Compliance Time Schedule

2. Description of Source (same as used on appendix): Lanly Oven

3. Your identification for Source (same as used on appendix): Lanly Oven-Drying Ceramic Powder.

I, being the individual specified in Rule 3745-35-02(B) of the Ohio Administrative Code, hereby apply for a Permit to Operate the air contaminant source(s) described herein. As required, the following additional documents are submitted as part of this application (describe all attachments):

James Mousseau/ James Mousseau
Authorized Signature*

Quality Control Manager
Title

December 11, 1989
Date

E-94

Operation of an air contaminant source without

For Official Use Only

Premise No. _____
Source No. _____

APPENDIX A, PROCESS

PROCESS DATA

1. Name of process Ceramic Power Drying
2. End product of this process Ceramic Product Ready for Calcining
3. Primary process equipment Lanly Oven

   Your identification Lanly Oven Year Installed 1958
4. Manufacturer The Lanly Company Make or Model 4119
5. Capacity of equipment (lbs./hr): Rated 100 lb.water/hr Max. 100 lb. water/hr.
6. Method of exhaust ventilation: [X] Stack [] Window fan [] Roof vent
   [] Other, describe _____

   Are there multiple exhausts? [] Yes [X] No

OPERATING DATA

7. Normal operating schedule: 24 hrs./day, 4 days/wk., 50 wks./year.
8. Percent annual production (finished units) by season:
   Winter 26 Spring 26 Summer 22 Fall 26
9. Hourly production rates (lbs.): Average 160 lb. Ceramic Maximum 160 lb. Ceramic
10. Annual production (indicate units) 200,000 to 400,000 lb. Ceramic
    Projected percent annual increase in production 5.0
11. Type of operation: [] Continuous [X] Batch
12. If batch, indicate Minutes per cycle 2900 Minutes between cycles 2900
13. Materials used in process:

List of Raw Materials	Principal Use	Amount (lbs./hr.)
2900	Lead Zirconate Titanate	106
Zirconium Oxide	Ceramic Power	37
Titanium Oxide		17
Water	Mixing Medium	100

14. A PROCESS FLOW DIAGRAM MUST BE INCLUDED WITH THIS APPENDIX. Show entry and exit points of all raw materials, intermediate products, by-products and finished products. Label all materials including airborne contaminants and other waste materials. Label the process equipment and control equipment.

(continued on reverse side)

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CONTROL EQUIPMENT

Control Equipment Code:

(A) Settling chamber
(B) Cyclone
(C) Multiple cyclone
(D) Electrostatic precipitator
(E) Fabric filter
(F) Spray chamber
(G) Cyclonic scrubber
(H) Impingement scrubber
(I) Orifice scrubber
(J) Venturi scrubber
(K) Plate or tray tower
(L) Packed tower
(M) Adsorber
(N) Condenser
(O) Afterburner - catalytic
(P) Afterburner - thermal
(Q) Other, describe N/A

15. Control Equipment data:

Item	Primary Collector	Secondary Collector
(a) Type (See above code)		
(b) Manufacturer		
(c) Model No.		
(d) Year installed		
(e) Your identification		
(f) Pollutant Controlled		
(g) Controlled pollutant emission rate (if known)		
(h) Pressure drop		
(i) Design efficiency		
(j) Operating efficiency		

STACK DATA

16. Your stack identification Lanly Oven Exhaust

17. Are other sources vented to this stack: [] Yes [X] No
If yes, identify sources _____

18. Type: [] Round, top inside diameter dimension 9-3/4"
[] Rectangular, top inside dimensions (L) _____ x (W) _____

19. Height: Above roof 2 ft., above ground 48 ft.

20. Exit gas: Temp. 210 °F, Volume 650 ACFM, Velocity unknown ft./min.

21. Continuous monitoring equipment: [] Yes [X] No
If yes, indicate: Type _____, Manufacturer _____
Make or Model _____, Pollutant(s) monitored _____

22. Emission data: Emissions from this source have been determined and such data is included with this appendix: [] Yes [X] No

If yes, check method: [] Stack Test [] Emission factor [] Material balance

Completed by James Mousseau, Date 12/11/89
James Mousseau

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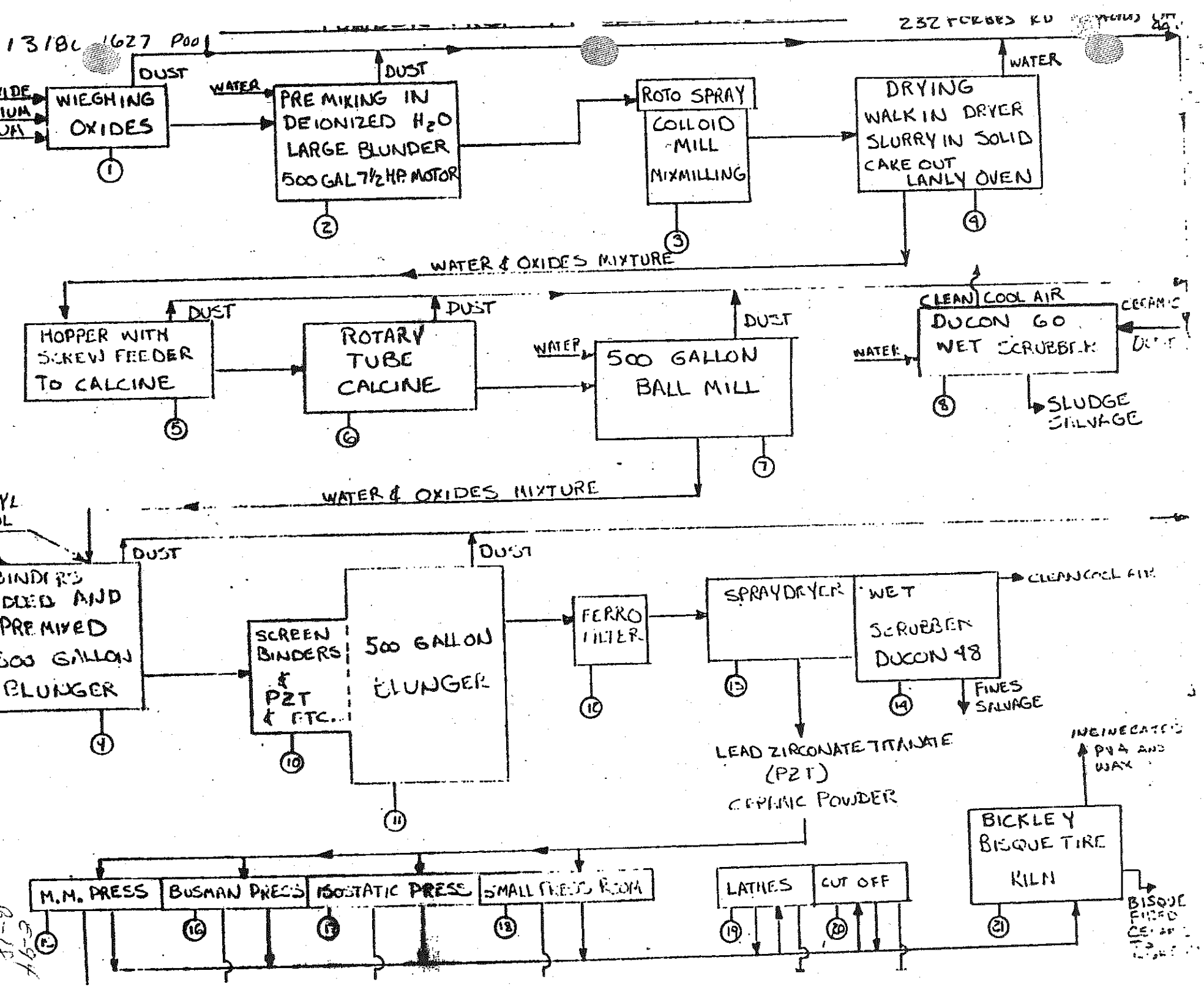
1318C 1627 P00
DUST
WEIGHING OXIDES
1
WATER
DUST
PRE MIXING IN DEIONIZED H_2O LARGE BLUNDER 500 GAL 7½ HP MOTOR
2
ROTO SPRAY COLLOID MILL MIXMILLING
3
WATER
DRYING WALK IN DRYER SLURRY IN SOLID CAKE OUT LANLY OVEN
9
WATER & OXIDES MIXTURE
DUST
HOPPER WITH SCREW FEEDER TO CALCINE
5
DUST
ROTARY TUBE CALCINE
6
WATER
DUST
500 GALLON BALL MILL
7
CLEAN COOL AIR
CERAMIC DUST
WATER
DUCON GO WET SCRUBBER
8
SLUDGE SALVAGE
WATER & OXIDES MIXTURE
DUST
BINDERS BLEED AND PREMIXED 500 GALLON BLUNGER
4
DUST
SCREEN BINDERS & PZT & ETC.
10
500 GALLON BLUNGER
11
FERRO FILTER
12
SPRAY DRYER
WET SCRUBBER DUCON 48
14
CLEAN COOL AIR
FINES SALVAGE
LEAD ZIRCONATE TITANATE (PZT) CERAMIC POWDER
INCINERATED PVA AND WAX
BICKLEY BISQUE FIRE KILN
21
BISQUE FIRED CERAMIC TO
M.M. PRESS
BUSMAN PRESS
ISOSTATIC PRESS
SMALL PRESS ROOM
16
17
18
LATHES
CUT OFF
19
20

OhioEPA
State Of Ohio Environmental Protection Agency
P.O. Box 1049, 361 East Broad St., Columbus, Ohio 43266-0149
(614)466-8565

Richard F. Celeste, Governor

NOV 0 7 1986

CERTIFIED MAIL

1318031627 P001
VERNITRON PIEZOELECTRIC DIV.
CAS STEVENS
232 FORBES ROAD
BEDFORD, OHIO 44146

Dear Sir or Madam:

Enclosed are Permit(s) to Operate which allow you to operate the described air contaminant sources(s) in the manner indicated in the permit(s). Because these permits contain several conditions and restrictions, I urge you to read them carefully.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmenal Law Division of the Office of the Attorney General within three (3) days of filing with the board. An appeal may be filed with the Environmental Board of review at the following address:

Environmental Board of Review
250 East Town Street
Room 101
Columbus, Ohio 43215

If you have any questions, please contact the air pollution control agency to which you submitted your application.

Very truly yours,

Thomas G. Rigo

Thomas G. Rigo, Manager
Field Operations Section
Division of Air Pollution Control

TGR/mm

EPA-3167
08/20/85

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OhioEPA

State of Ohio Environmental Protection Agency

02

Permit to Operate an Air Contaminant Source
Terms and Conditions

Date of Issuance 11/17/86

Application Number 1318031627P001

Effective Date 11/17/86

Permit Fee $10

This document constitutes issuance to: VERNITRON PIEZOELECTRIC DIV.
232 FORBES ROAD
BEDFORD OHIO 44146

of a permit to operate:
PZT MIXERS-SPRAY-DRYER & KILN
C-1-16 DICKLEY CERAMIC BISQUE KILN, PZT CERAM

The following terms and conditions are hereby expressly incorporated into this permit to operate:

Condition 1

The above described air contaminant source is now operating, and over the period covered by the permit will be operated, in full compliance with all applicable state and federal laws and regulations.

Condition 2

Prior to any physical change in, or change in the method of operation of, this air contaminant source which increases the amount of any air pollutant emitted, or results in the emission of any air pollutant not previously emitted, a permit to install must be granted by the Ohio Environmental Protection Agency (See Chapter 3745-31 of the Ohio Administrative Code).

Condition 3

The Director of the Ohio Environmental Protection Agency, or his authorized representative, may enter upon the premises of the source operation at any reasonable time and subject to safety requirements of the person in control of the premises for the purpose of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants and determining compliance with all applicable State and Federal air pollution laws and regulations and the terms and conditions of this permit.

Condition 4 (This condition applicable if checked: ☐)

Upon declaration of an Air Pollution Alert, Warning or Emergency Episode this air contaminant source will follow those emission reduction procedures enumerated in the Emergency Action Plan approved by the Director for this source.

Condition 5

This permit to operate shall be effective until 11/16/89. You will be contacted approximately six months prior to this date regarding the renewal of this permit. If you are not contacted, please write to this agency.

Condition 6

A permit fee in the amount specified above must be remitted within fifteen (15) days of the effective date of this permit.

Condition 7

Any transferee of this permit shall, personally, assume the responsibilities of the original permit holder-transferor. The Ohio EPA must be notified in writing of any transfer of this permit.

Condition 8 (This condition is applicable if checked: ☐)

This permit is subject to the supplementary conditions attached.

OHIO ENVIRONMENTAL PROTECTION AGENCY

E-99
B-20

EPA 2934

FOR OHIO EPA USE ONLY

OHIO ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR A PERMIT TO OPERATE
AN AIR CONTAMINANT SOURCE

APS APPL NO _____
DATE RECEIVED _____

Vernitron Piezoelectric Division
Facility Name

Cas Stevens
Person to Contact

232 Forbes Road
Facility Address

232 Forbes Road
Mailing Address

Bedford	Cuyahoga	44146
City	County	Zip

Bedford,	Ohio	44146
City	State	Zip

(216)	232 -8600	
Telephone	Area	Number

(216)	232-8600	
Telephone	Area	Number

1318031627 P001
(Application No., if this is a renewal application)

3679
Standard Industrial Classification Code

1. Complete and attach any of the following appendices most appropriate to the air contaminant source. In addition, a compliance time schedule form is to be attached when applicable. Check as appropriate the following:

- x Appendix A, Process
- ___ Appendix B, Fuel-Burning Equipment
- ___ Appendix C, Incinerator
- ___ Appendix D, Surface Coating or Printing Operation
- ___ Appendix E, Storage Tank
- ___ Appendix H, Gasoline Dispensing Facility
- ___ Appendix J, Loading Rack at Bulk Gasoline Plant or Terminal
- ___ Appendix K, Surface Coating Line or Printing Line
- ___ Appendix L, Solvent Metal Cleaning
- ___ Appendix M, Fugitive Dust Emission Sources
- ___ (Specify Appendix No.)
- ___ Appendix N, Rubber Tire Manufacturing
- ___ Appendix O, Dry Cleaning Facility
- ___ Appendix P, Synthesized Pharmaceutical Manufacturing
- ___ Other Appendix _____
- ___ Compliance Time Schedule

2. Description of Source (same as used on appendix): C-1416 Bickley Ceramic Bisque Kiln and PZT Ceramic Process Equipment

3. Your identification for Source (same as used on appendix): C-1416 Bickley Ceramic Bisque Kiln and Associated PZT Ceramic Process Equipment See Appendix A

I, being the individual specified in Rule 3745-35-02(B) of the Ohio Administrative Code, hereby apply for a Permit to Operate the air contaminant source(s) described herein. As required, the following additional documents are submitted as part of this application (describe all attachments): Process Diagram for PZT Ceramic (Lead Zirconate Titanate) as Part of Appendix A

C Stevens
Authorized Signature*

Quality Control Mgr
Title

April 29 1996
Date

*Pursuant to OAC Rule 3745-35-02(B) (Permit to Operate).

Operation of an air contaminant source without effective permit to operate is prohibited pursuant to 3704.05 Ohio Revised Code.

E-94
0221

For Official Use Only

Premise No. _____
Source No. _____

APPENDIX A, PROCESS

PROCESS DATA

1. Name of process Ceramic Bisque Firing and PZT Ceramic Process
2. End product of this process Piezoelectric Ceramic Ready for High Firing
3. Primary process equipment Bisque Kiln
   Your identification C-1416 Bickley Year Installed 1962
4. Manufacturer Bickley Furnaces, Inc. Make or Model 5200, Serial #472
5. Capacity of equipment (lbs./hr): Rated 2,000 lbs. Max. Load/2 Days
6. Method of exhaust ventilation: [X] Stack [ ] Window fan [ ] Roof vent
   [ ] Other, describe _____
   Are there multiple exhausts? [ ] Yes [X] No

OPERATING DATA

7. Normal operating schedule: 16 hrs./day, 5 days/wk., 50 wks./year.
8. Percent annual production (finished units) by season:
   Winter 26 Spring 26 Summer 26 Fall 22
9. Hourly production rates (lbs.): Average 2,000 lb/loan Maximum -----
10. Annual production (indicate units) 40,000 to 200,000 pieces depending on part sizes.
    Projected percent annual increase in production 5
11. Type of operation: [ ] Continuous [X] Batch
12. If batch, indicate Minutes per cycle 960 Minutes between cycles 480
13. Materials used in process:

List of Raw Materials	Principal Use	Amount (lbs./hr.)
Polyvinyl Alcohol	Ceramic Binder	36 lbs/load/day
Microcrystalline Wax	Cera, oc Bomder	34 lbs/load/day

14. A PROCESS FLOW DIAGRAM MUST BE INCLUDED WITH THIS APPENDIX. Show entry and exit points of all raw materials, intermediate products, by-products and finished products. Label all materials including airborne contaminants and other waste materials. Label the process equipment and control equipment.

(continued on reverse side)

E-94

CONTROL EQUIPMENT

Control Equipment Code:

(A) Settling chamber
(B) Cyclone
(C) Multiple cyclone
(D) Electrostatic precipitator
(E) Fabric filter
(F) Spray chamber
(G) Cyclonic scrubber
(H) Impingement scrubber
(I) Orifice scrubber
(J) Venturi scrubber
(K) Plate or tray tower
(L) Packed tower
(M) Adsorber
(N) Condenser
(O) Afterburner - catalytic
(P) Afterburner - thermal
(Q) Other, describe Multivane Scrubber

15. Control Equipment data: See Paragraph 14 Process Diagram

Item	Primary Collector	Secondary Collector
(a) Type (See above code)	3 Q	Q
(b) Manufacturer	The Ducon Co., Inc.	The Ducon Co., Inc.
(c) Model No.	60	48
(d) Year installed	1979	1978
(e) Your identification	Wet Scrubber DuCon 60	Wet Scrubber Spray Dryer-
(f) Pollutant Controlled	Ceramic/Lead Oxides Dust	Ceramic/Lead Zirconate Titanate Dust
(g) Controlled pollutant emission rate (if known)		
(h) Pressure drop	6" WG	7.5" WG
(i) Design efficiency	99.5%	99.5%
(j) Operating efficiency	99 + %	99 +%

STACK DATA

16. Your stack identification Bicley (Isojet) Exhaust Stack

17. Are other sources vented to this stack: [ ] Yes [X] No
If yes, identify sources _____

18. Type: [ ] Round, top inside diameter dimension 25.5"
[ ] Rectangular, top inside dimensions (L) _____ x (W) _____

19. Height: Above roof 14 ft., above ground 34 ft.

20. Exit gas: Temp. 400 °F, Volume 6698 ACFM, Velocity Unknown ft./min.

21. Continuous monitoring equipment: [ ] Yes [X] No
If yes, indicate: Type _____, Manufacturer _____
Make or Model _____, Pollutant(s) monitored _____

22. Emission data: Emissions from this source have been determined and such data is included with this appendix: [ ] Yes [X] No

If yes, check method: [ ] Stack Test [ ] Emission factor [ ] Material balance

Completed by C Flum, Date 4/29/86

E-94
8-23

For Official Use Only

Premise No. _____

Source No. _____

APPENDIX A, PROCESS

PROCESS DATA

1. Name of process Ceramic Power Drying

2. End product of this process Ceramic Product Ready for Calcining

3. Primary process equipment Lanly Oven

   Your identification Lanly Oven Year Installed 1958

4. Manufacturer The Lanly Company Make or Model 4119

5. Capacity of equipment (lbs./hr): Rated 100 lb. water/hr Max. 100 lb. water/hr

6. Method of exhaust ventilation: [X] Stack [ ] Window fan [ ] Roof vent
   [ ] Other, describe _____

   Are there multiple exhausts? [ ] Yes [X] No

OPERATING DATA

7. Normal operating schedule: 24 hrs./day, 4 days/wk., 50 wks./year.

8. Percent annual production (finished units) by season:
   Winter 26 Spring 26 Summer 22 Fall 26

9. Hourly production rates (lbs.): Average 160 lb. Ceramic Maximum 160 lb. Ceramic

10. Annual production (indicate units) 200,000 to 400,000 lb. Ceramic
    Projected percent annual increase in production 5.0

11. Type of operation: [ ] Continuous [X] Batch

12. If batch, indicate Minutes per cycle 2900 Minutes between cycles 2900

13. Materials used in process:

List of Raw Materials	Principal Use	Amount (lbs./hr.)
2900	Lead Zirconate Titanate	106
Zirconium Oxide	Ceramic Power	37
Titanium Oxide		17
Water	Mixing Medium	100

14. A PROCESS FLOW DIAGRAM MUST BE INCLUDED WITH THIS APPENDIX. Show entry and exit points of all raw materials, intermediate products, by-products and finished products. Label all materials including airborne contaminants and other waste materials. Label the process equipment and control equipment.

(continued on reverse side)

CONTROL EQUIPMENT

Control Equipment Code:

(A) Settling chamber
(B) Cyclone
(C) Multiple cyclone
(D) Electrostatic precipitator
(E) Fabric filter
(F) Spray chamber
(G) Cyclonic scrubber
(H) Impingement scrubber
(I) Orifice scrubber
(J) Venturi scrubber
(K) Plate or tray tower
(L) Packed tower
(M) Adsorber
(N) Condenser
(O) Afterburner - catalytic
(P) Afterburner - thermal
(Q) Other, describe N/A

15. Control Equipment data:

Item	Primary Collector	Secondary Collector
(a) Type (See above code)		
(b) Manufacturer		
(c) Model No.		
(d) Year installed		
(e) Your identification		
(f) Pollutant Controlled		
(g) Controlled pollutant emission rate (if known)		
(h) Pressure drop		
(i) Design efficiency		
(j) Operating efficiency		

STACK DATA

16. Your stack identification Lanly Oven Exhaust

17. Are other sources vented to this stack: [ ] Yes [X] No
If yes, identify sources _____

18. Type: [ ] Round, top inside diameter dimension 9-3/4"
[ ] Rectangular, top inside dimensions (L) _____ x (W) _____

19. Height: Above roof 2 ft., above ground 48 ft.

20. Exit gas: Temp. 210 °F, Volume 650 ACFM, Velocity unknown ft./min.

21. Continuous monitoring equipment: [ ] Yes [X] No
If yes, indicate: Type _____, Manufacturer _____
Make or Model _____, Pollutant(s) monitored _____

22. Emission data: Emissions from this source have been determined and such data is included with this appendix: [ ] Yes [X] No

If yes, check method: [ ] Stack Test [ ] Emission factor [ ] Material balance

Completed by C Flum, Date 4/29/96

E-94
B-25

OhioEPA

APR 04 1983

CERTIFIED MAIL

1318031627 P001
VERNITRON PIEZOELECTRIC DIV.
PAUL W. JACKSON
232 FORBES ROAD
BEDFORD, OHIO OHIO 44146

Dear Sir or Madam:

Enclosed are Permit(s) to Operate which allow you to operate the described air contaminant source(s) in the manner indicated in the permit(s). Because these permit(s) contain several conditions and restrictions, I urge you to read them carefully.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency and the Environmental Law Division of the Office of the Attorney General within three (3) days of filing with the board. An appeal may be filed with the Environmental Board of Review at the following address:

Environmental Board of Review
250 East Town Street
Room 101
Columbus, Ohio 43215

If you have any questions, please contact the air pollution control agency to which you submitted your application.

Very truly yours,

Patricia P. Walling

Patricia P. Walling, Manager
Authorization & Compliance Section
Division of Air Pollution Control

EPA-3167
09/21/82

OhioEPA

State of Ohio Environmental Protection Agency

02

Permit to Operate an Air Contaminant Source
Terms and Conditions

Date of Issuance 04/04/83 Application Number 1318031627P001

Effective Date 04/04/83 Permit Fee $100

This document constitutes issuance to: VERNITRON PIEZOELECTRIC DIV.
232 FORBES ROAD
BEDFORD OHIO 44146

of a permit to operate:
PZT MIXERS-SPRAY-DRYER & KILN
PZT CERAMIC PROCESS EQUIPMENT

The following terms and conditions are hereby expressly incorporated into this permit to operate:

Condition 1

The above described air contaminant source is now operating, and over the period covered by the permit will be operated, in full compliance with all applicable state and federal laws and regulations.

Condition 2

Prior to any physical change in, or change in the method of operation of, this air contaminant source which increases the amount of any air pollutant emitted, or results in the emission of any air pollutant not previously emitted, a permit to install must be granted by the Ohio Environmental Protection Agency (See Chapter 3745-31 of the Ohio Administrative Code).

Condition 3

The Director of the Ohio Environmental Protection Agency, or his authorized representative, may enter upon the premises of the source operation at any reasonable time and subject to safety requirements of the person in control of the premises for the purpose of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants and determining compliance with all applicable State and Federal air pollution laws and regulations and the terms and conditions of this permit.

Condition 4 (This condition applicable if checked: ☐)

Upon declaration of an Air Pollution Alert, Warning or Emergency Episode this air contaminant source will follow those emission reduction procedures enumerated in the Emergency Action Plan approved by the Director for this source.

Condition 5

This permit to operate shall be effective until 04/03/86. You will be contacted approximately six months prior to this date regarding the renewal of this permit. If you are not contacted, please write to this agency.

Condition 6

A permit fee in the amount specified above must be remitted within fifteen (15) days of the effective date of this permit.

Condition 7

Any transferee of this permit shall, personally, assume the responsibilities of the original permit holder-transferor. The Ohio EPA must be notified in writing of any transfer of this permit.

Condition 8 (This condition is applicable if checked: ☐)

This permit is subject to the supplementary conditions attached.

OHIO ENVIRONMENTAL PROTECTION AGENCY

Robert A. Hayman

E-94

OHIO ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR A PERMIT TO OPERATE
AN AIR CONTAMINANT SOURCE

FOR OHIO EPA USE ONLY

APS APPL NO _____
DATE RECEIVED _____

Vernitron Piezoelectric Division
Facility Name

Cas Stevens
Person to Contact

232 Forbes Road
Facility Address

232 Forbes Road
Mailing Address

Bedford | Cuyahoga | 44146
City | County | Zip

Bedford, | Ohio | 44146
City | State | Zip

(216) 232-8600
Telephone Area Number

(216) 232-8600
Telephone Area Number

1318031627 P001
(Application No., if this is a renewal application)

1. Complete and attach any of the following appendices most appropriate to the air contaminant source. In addition, a compliance time schedule form is to be attached when applicable. Check as appropriate the following:

- X Appendix A, Process
- ____ Appendix B, Fuel-Burning Equipment
- ____ Appendix C, Incinerator
- ____ Appendix D, Surface Coating or Printing Operation
- ____ Appendix E, Storage Tank
- ____ Appendix H, Gasoline Dispensing Facility
- ____ Appendix J, Loading Rack at Bulk Gasoline Plant or Terminal
- ____ Appendix K, Surface Coating Line or Printing Line
- ____ Appendix L, Solvent Metal Cleaning
- ____ Appendix M, Fugitive Dust Emission Sources
  _____ (Specify Appendix No.)
- ____ Appendix N, Rubber Tire Manufacturing
- ____ Appendix O, Dry Cleaning Facility
- ____ Appendix P, Synthesized Pharmaceutical Manufacturing
- ____ Other Appendix _____
- ____ Compliance Time Schedule

2. Description of Source (same as used on appendix): C-1416 Bickley Ceramic Bisque Kiln and PZT Ceramic Process Equipment

3. Your Identification for Source (same as used on appendix): C-1416 Bickley Ceramic Bisque Kiln and Associated PZT Ceramic Process Equipment See Appendix A

I, being the individual specified in Rule 3745-35-02(B) of the Ohio Administrative Code, hereby apply for a Permit to Operate the air contaminant source(s) described herein. As required, the following additional documents are submitted as part of this application (describe all attachments): Process Diagram For PZT Ceramic (Lead Zirconate Titanate) As Part of Appendix A

Authorized Signature*

Engineering Manager
Title

7/16/82
Date

E-94

*Pursuant to OAC Rule 3745-35-02(B) (Permit to Operate).

For Official Use Only

Premise No._____
Source No._____

APPENDIX A, PROCESS

PROCESS DATA

1. Name of process Ceramic Bisque Firing and PZT Ceramic Process
2. End product of this process Piezoelectric Ceramic Ready For High Firing
3. Primary process equipment Bisque Kiln

   Your identification C-1416 Bickley Year Installed 1962
4. Manufacturer Bickley Furnaces, Inc. Make or Model 5200, Serial #472
5. Capacity of equipment (lbs./hr): Rated 2,000 lbs. Max. Loan/2Days
6. Method of exhaust ventilation: [X] Stack [ ] Window fan [ ] Roof vent
   [ ] Other, describe _____

   Are there multiple exhausts? [ ] Yes [X] No

OPERATING DATA

7. Normal operating schedule: 16 hrs./day, 5 days/wk., 50 wks./year.
8. Percent annual production (finished units) by season:
   Winter 25 Spring 26 Summer 25 Fall 22
9. Hourly production rates (lbs.): Average 2,000 lb/loan Maximum -----
10. Annual production (indicate units) 40,000 to 200,000 pieces depending on part sizes
    Projected percent annual increase in production 5
11. Type of operation: [ ] Continuous [X] Batch
12. If batch, indicate Minutes per cycle 960 Minutes between cycles 480
13. Materials used in process:

List of Raw Materials	Principal Use	Amount (lbs./hr.)
Polyvinyl Alcohol	Ceramic Binder	36 lbs/load/day
Microcrystalline Wax	Ceramic Bonder	34 lbs/load/day

14. A PROCESS FLOW DIAGRAM MUST BE INCLUDED WITH THIS APPENDIX. Show entry and exit points of all raw materials, intermediate products, by-products and finished products. Label all materials including airborne contaminants and other waste materials. Label the process equipment and control equipment.

(continued on reverse side)

C-94

CONTROL EQUIPMENT

Control Equipment Code:

(A) Settling chamber
(B) Cyclone
(C) Multiple cyclone
(D) Electrostatic precipitator
(E) Fabric filter
(F) Spray chamber
(G) Cyclonic scrubber
(H) Impingement scrubber
(I) Orifice scrubber
(J) Venturi scrubber
(K) Plate or tray tower
(L) Packed tower
(M) Adsorber
(N) Condenser
(O) Afterburner - catalytic
(P) Afterburner - thermal
(Q) Other, describe Multivane Scrubber

15. Control Equipment data: See Paragraph 14 Process Diagram

Item	Primary Collector	Secondary Collector
(a) Type (See above code)	3 Q	Q
(b) Manufacturer	The Ducon Co., Inc.	The Ducon Co., Inc.
(c) Model No.	60	48
(d) Year installed	1979	1978
(e) Your identification	Wet Scrubber DuCon 60	Wet Scrubber SprayDryer
(f) Pollutant Controlled	Ceramic/Lead Oxides Dust	Ceramic/Lead Zirconate Titanate Dust
(g) Controlled pollutant emission rate (if known)		
(h) Pressure drop	6" WG	7.5" WG
(i) Design efficiency	99.5%	99.5%
(j) Operating efficiency	99 + %	99 + %

STACK DATA

16. Your stack identification Bickley (Isojet) Exhaust Stack

17. Are other sources vented to this stack: [ ] Yes [X] No
If yes, identify sources ____

18. Type: [X] Round, top inside diameter dimension 25.5"
[ ] Rectangular, top inside dimensions (L) ____ x (W) ____

19. Height: Above roof 14 ft., above ground 34 ft.

20. Exit gas: Temp. 400 °F, Volume 6698 ACFM, Velocity Unknown ft./min.

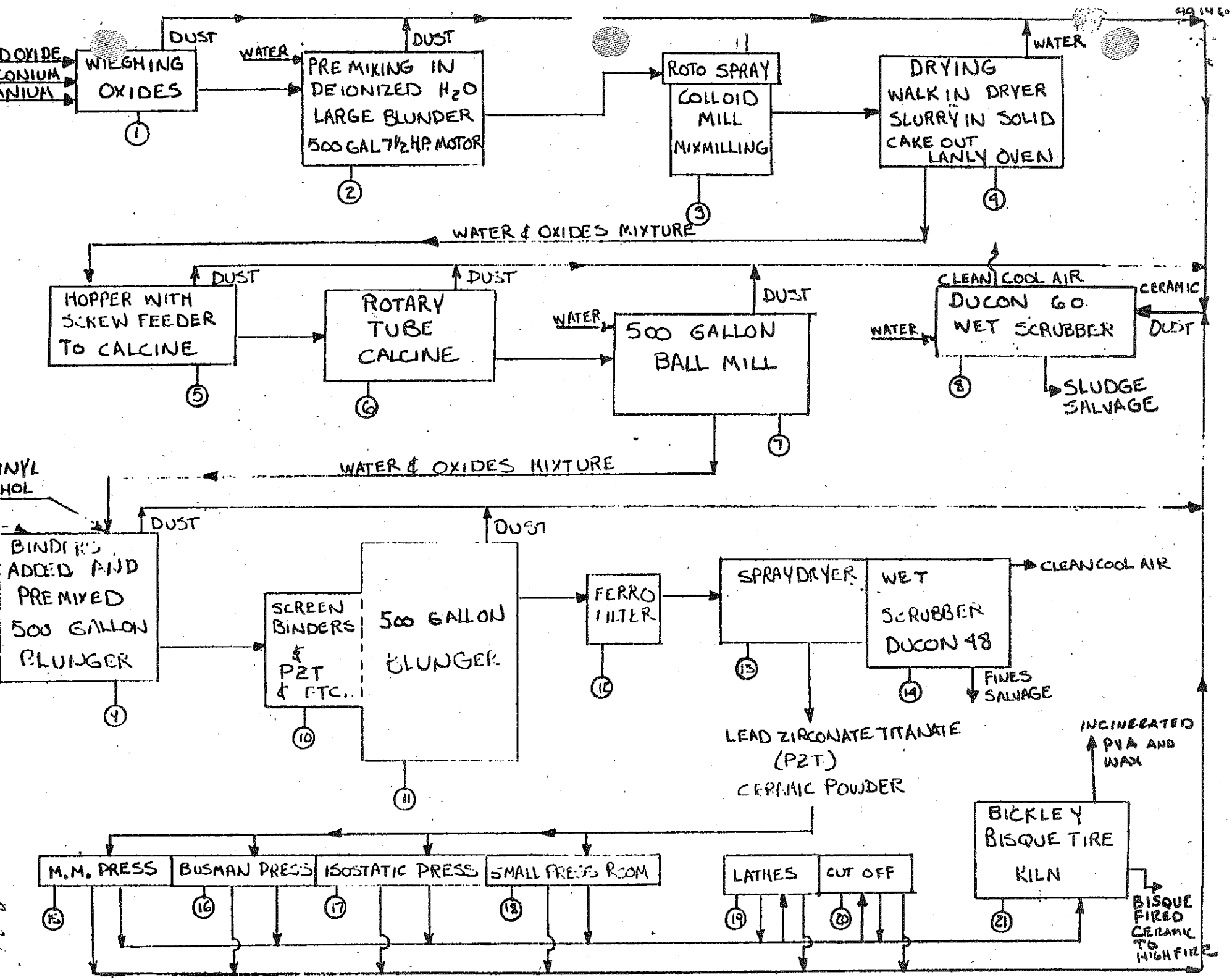
21. Continuous monitoring equipment: [ ] Yes [X] No
If yes, indicate: Type ____, Manufacturer ____
Make or Model ____, Pollutant(s) monitored ____

22. Emission data: Emissions from this source have been determined and such data is included with this appendix: [ ] Yes [X] No

If yes, check method: [ ] Stack Test [ ] Emission factor [ ] Material balance

Completed by [signature], Date 7/16/82

E-94


D OXIDE
CONIUM
ANIUM
WEIGHING OXIDES
1
DUST
WATER
PRE MIXING IN DEIONIZED H_2O LARGE BLUNDER 500 GAL 7½ HP MOTOR
2
DUST
ROTO SPRAY COLLOID MILL MIXMILLING
3
DRYING WALK IN DRYER SLURRY IN SOLID CAKE OUT LANLY OVEN
4
WATER
WATER & OXIDES MIXTURE
HOPPER WITH SCREW FEEDER TO CALCINE
5
DUST
ROTARY TUBE CALCINE
6
DUST
WATER
500 GALLON BALL MILL
7
DUST
CLEAN COOL AIR
DUCON GO WET SCRUBBER
8
CERAMIC DUST
WATER
SLUDGE SALVAGE
WATER & OXIDES MIXTURE
INYL
HOL
BINDERS ADDED AND PREMIXED 500 GALLON BLUNGER
9
DUST
SCREEN BINDERS & PZT & ETC..
10
500 GALLON BLUNGER
11
DUST
FERRO FILTER
12
SPRAY DRYER
13
WET SCRUBBER DUCON 48
14
CLEAN COOL AIR
FINES SALVAGE
LEAD ZIRCONATE TITANATE (PZT) CERAMIC POWDER
INCINERATED PVA AND WAX
BICKLEY BISQUE TIRE KILN
21
BISQUE FIRED CERAMIC TO HIGH FIRE
M.M. PRESS
15
BUSMAN PRESS
16
ISOSTATIC PRESS
17
SMALL PRESS ROOM
18
LATHES
19
CUT OFF
20

For Official Use Only

Premise No. ___/___/___/____
Source No. ___/_____
Application No. ___/_____

APPENDIX A, PROCESS

PROCESS DATA

1. Name of process Ceramic Bisque Firing
2. End product of this process Bisqued Ceramic parts ready for high firing
3. Primary process equipment Bisque Kiln

   Your identification C-1416 Bickley Year Installed 1962
4. Manufacturer Bickley Furnaces, Inc. Make or model 5200,Ser.#472
5. Capacity of equipment (lbs./hr): Rated 2000 lbs. Load =~~Max=~~/Day (Approx.)
6. Method of exhaust ventilation: ☒ Stack ☐ Window fan ☐ Roof vent ☐ Other, describe

   Are there multiple exhausts? ☐ Yes ☒ No

OPERATING DATA

7. Normal operating schedule: 16 hrs./day, 5 days/wk., 50 wks./year.
8. Percent annual production (finished units) by season:
   Winter 26 Spring 26 Summer 26 Fall 22
9. Hourly production rates (lbs.): Average 2000 lbs./load Maximum
10. Annual production (indicate units) ~~40,000 to 200,000 depending on part size~~
    Projected percent annual increase in production 10
11. Type of operation: ☐ Continuous ☒ Batch
12. If batch, indicate Minutes per cycle 960 Minutes between cycles 480
13. Materials used in process:

List of Raw Materials	Principal Use	Amount (lbs./hr.)
Polyvinyl Alcohol	Ceramic Binder	36 Lbs./Load/Day
~~Microcrystalline Wax~~	Ceramic Binder	~~34 Lbs./Load/Day~~

14. A PROCESS FLOW DIAGRAM MUST BE INCLUDED WITH THIS APPENDIX. Show entry and exit points of all raw materials, intermediate products, by-products and finished products, Label all materials including airborne contaminants and other waste materials. Label the process equipment and control equipment.

The process consits of loading a kiln car, lowering the bell into place and Bisque firing the ware to 760°C over a 16 hour period with an additional 8 hour cooling period. The polyvinyl alcohol and the wax are burned out of the ceramic during the operation.

E-94

CONTROL EQUIPMENT

Control Equipment Code:

(A)	Settling chamber	(G)	Cyclonic scrubber	(M)	Adsorber
(B)	Cyclone	(H)	Impingement scrubber	(N)	Condenser
(C)	Multiple cyclone	(I)	Orifice scrubber	(O)	Afterburner - catalytic
(D)	Electrostatic precipitator	(J)	Venturi scrubber	(P)	Afterburner - thermal
(E)	Fabric filter	(K)	Plate or tray tower	(Q)	Other, describe N/A
(F)	Spray chamber	(L)	Packed tower		

15. Control Equipment data:

Item	Primary Collector	Secondary Collector
(a) Type (See above code)		
(b) Manufacturer		
(c) Model No.		
(d) Year installed		
(e) Your identification		
(f) Pollutant Controlled		
(g) Controlled pollutant emission rate (if known)		
(h) Pressure drop		
(i) Design efficiency		
(j) Operating efficiency		

STACK DATA

16. Your stack identification Bickley (Isojet) Exhaust Stack

17. Are other sources vented to this stack? ☐ Yes ☒ No
If yes, identify sources _____

18. Type: ☒ Round, top inside diameter dimension 25.5"
☐ Rectangular, top inside dimensions (L) _____ x (W) _____

19. Height: Above roof 14 ft., above ground 34 ft.

20. Exit gas: Temp. 400° °F, Volume 6698 ACFM, Velocity Unknown ft./min.

21. Continuous monitoring equipment: ☐ Yes ☒ No
If yes, indicate: Type _____, Manufacturer _____
Make or Model _____, Pollutant(s) monitored _____

22. Emission data: Emissions from this source have been determined and such data is included with this appendix: ☐ Yes ☒ No
If yes, check method: ☐ Stack Test ☐ Emission factor ☐ Material balance

Completed by _____, Date 8-30-79
Ronald Roch

E-94
B-33

Ohio Environmental Protection Agency

Renewal Application for a Permit to Operate

an Air Contaminant Source

Vernitron Piezoelectric Division Facility Name	Ronald Roch Person to Contact
232 Forbes Road Facility Address	232 Forbes Road Mailing Address
Bedford Cuyahoga 44146 City County Zip	Bedford Ohio 44146 City State Zip
1318031627P001 Application No. (see attached Notice)	216 232-8600 Telephone Area Number

1. Complete and attach one of the following appendices most appropriate to the air contaminant source. Only one appendix may accompany this application.

   (Check one)
   - X Appendix A, Process
   - ___ Appendix B, Fuel-Burning Equipment
   - ___ Appendix C, Incinerator
   - ___ Appendix D, Surface Coating or Printing Operation
   - ___ Appendix E, Storage Tank or Loading Facility

2. Description of Source (same as used on appendix): Bickley - Ceramic Bisque Kiln

3. Your Identification for Source (same as used on appendix):

   C-1416 Bickley Bisque Kiln

I, being the individual specified in OAC 3745-35 of the rules of the Ohio Environmental Protection Agency, hereby apply for a Permit to Operate OAC 3745-35-02 for the air contaminant source described herein.

Ronald Roch

Signature of Officer ~~or Owner~~*

Production Mgr.

Title

8-30-79

Date

* As per OAC 3745-35-02(B)(1) (Permit to Operate)
See Instructions On Other Side

AP+PS-1101
8/11/77

E-94
B-34

State of Ohio Environmental Protection Agency, Box 1049, 361 East Broad Street, Columbus, Ohio 43216 (614) 466-8565

AUG 0 1 1975

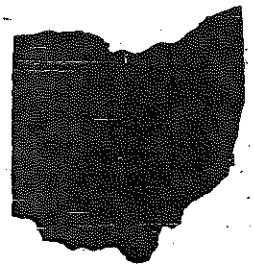
James A. Rhodes
Governor
E. Williams, P.E.
Director

1318031627 P001

CERTIFIED MAIL

VERNITRON PIEZOELECTRIC DIV.
PAUL W. JACKSON
232 FORBES ROAD
BEDFORD, OHIO OHIO 44146

OhioEPA



Dear Sir:

Enclosed are Permit(s) to Operate which allow you to operate the described air contaminant source(s) in the manner indicated in the permit(s). Because these permit(s) contain several conditions and restrictions, I urge you to read them carefully.

Under Ohio Revised Code, Chapters 3704 and 119, these order(s) will take effect on the date indicated unless you, or any objector(s) request an adjudication hearing within thirty (30) days of the date of issuance, as provided by Ohio Environmental Protection Agency Regulation EP-40-13. At an adjudication hearing you may appear in person, or be represented by your attorney, or by such other representative as is permitted to practice before this Agency, or you may present your position, arguments, or contentions in writing. At the hearing you may present evidence and examine witnesses appearing for and against you. Requests for hearings shall be in writing and shall specify the issues of fact and law to be contested. Requests for hearings shall be sent to the Hearing Clerk, Box 1049, 361 East Broad St., Columbus, Ohio.

The Agency may withdraw these permit(s) at any time before these permit(s) take effect.

If you have any questions, please contact the air pollution control agency to whom you submitted your application.

Sincerely,

Thomas E. Crepeau

Thomas E. Crepeau
Chief, Air Permit Records

AP-PS-205
01/07/75

E-94
B-35

OhioEPA

State of Ohio Environmental Protection Agency

01

Permit to Operate an Air Contaminant Source
Terms and Conditions

Date of Issuance 09/01/75

Application Number 13180316275001

Effective Date 09/15/75

Permit Fee $ 0

This document constitutes issuance to: VERNITRON PIEZOELECTRIC DIV.
232 FORBES ROAD
BEDFORD OHIO 44146

of a permit to operate:
CERAMIC FIRING [illegible] KILN
C-1416 BICKLEY

The following terms and conditions are hereby expressly incorporated into this permit to operate:

Condition 1

The above described air contaminant source is now operating, and over the period covered by the permit will be operated, in full compliance with all applicable state and federal laws and regulations.

Condition 2

Prior to any physical change in, or change in the method of operation of, this air contaminant source which increases the amount of any air pollutant emitted, or results in the emission of any air pollutant not previously emitted, a permit to install must be granted by the Ohio Environmental Protection Agency (See Chapter EP-30 of the regulations).

Condition 3

The Director of the Ohio Environmental Protection Agency, or his authorized representative, may enter upon the premises of the source operation at any reasonable time and subject to safety requirements of the person in control of the premises for the purpose of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants and determining compliance with all applicable State and Federal air pollution laws and regulations and the terms and conditions of this permit.

Condition 4 (This condition applicable if checked: ☐)

Upon declaration of an Air Pollution Alert, Warning or Emergency Episode this air contaminant source will follow those emission reduction procedures enumerated in the Emergency Action Plan approved by the Director for this source.

Condition 5

This permit to operate shall be effective until 9/15/78. You will be contacted approximately four months prior to this date regarding the renewal of this permit. If you are not contacted, please write to this agency.

Condition 6

A permit fee in the amount specified above must be remitted within fifteen (15) days of the effective date of this permit.

Condition 7

The Director must be notified in writing prior to any transfer of a permit to operate. Such transfer shall not take place without the written permission of the Director.

Condition 8 (This condition is applicable if checked: ☐)

This permit is subject to the supplementary conditions attached.

OHIO ENVIRONMENTAL PROTECTION AGENCY

5103

Ned E. Williams

Director

6-94

AP PS 200

B-36

1318031627

Ohio Environmental Protection Agency

Application for a Permit or Variance to Operate

an Air Contaminant Source

VERNITRON Piezoelectric Div.	Casimer G. Stevens
Facility Name	Person to Contact
232 Forbes Road	232 Forbes Road
Facility Address	Mailing Address
Bedford Cuyahoga 44146	Bedford Ohio 44146
City County Zip	City State Zip
	216/232-8600
	Telephone Area Number

1. Complete and attach one of the following appendices most appropriate to the air contaminant source. Only one appendix may accompany this application.

   (Check one)
   - [x] Appendix A, Process
   - [ ] Appendix B, Fuel-Burning Equipment
   - [ ] Appendix C, Incinerator
   - [ ] Appendix D, Surface Coating or Printing Operation
   - [ ] Appendix E, Storage Tank or Loading Facility

2. Description of Source (same as used on appendix): Evaporation of water from ceramic-water slurry

3. Your Identification for Source (same as used on appendix): Spray Dryer

I, being the individual specified in Chapter EP-32 of the regulations of the Ohio Environmental Protection Agency, hereby apply for a (check only one):

X Permit to Operate (EP-32-02)

_____ Variance to Operate (EP-32-03)

for the air contaminant source described herein. The following additional documents are submitted as part of this application (describe all attachments):

C A Stevens

Signature of Officer or Owner*

Operations Mgr. VERNITRON Piezoelectric Div.

Title

December 29, 1975

Date

* As per Ohio EPA Regulation EP-32-02(B)(1) (Permit to Operate) or Regulation EP-32-03(B)(1) (Variance to Operate).

E-94

B-32

FO[illegible] AL USE ONLY

Premise No. 13 / 18 / 03 / 1627
Source No. ___ / ___
Application No. ___ / ___

APPENDIX , PROCESS

A-1

PROCESS DATA

1. Name of process EVAPORATION OF WATER FROM CERAMIC-WATER SLURRY
2. End product of this process DRY CERAMIC PRESSING POWDER
3. Primary process equipment SPRAY DRYER

   Your identification SPRAY DRYER Year Installed 1959
4. Manufacturer NICHOLS ENGINEERING Make or model NERCO-NIRO 360
5. Capacity of equipment (lbs./hr): Rated 150 WATER Max. 160 WATER
6. Method of exhaust ventilation: ☑ Stack ☐ Window fan ☐ Roof vent ☐ Other, describe ___

   Are there multiple exhausts? ☐ Yes ☑ No

OPERATING DATA

7. Normal operating schedule: 16 hrs./day, 2 days/wk., 40 wks./year.
8. Percent annual production (finished units) by season:
   Winter 21 Spring 29 Summer 21 Fall 29
9. Hourly production rates (lbs.): Average 350 Maximum 400
10. Annual production (indicate units) 448000 LBS
    Projected percent annual increase in production 0
11. Type of operation: ☐ Continuous ☑ Batch
12. If batch, indicate: Minutes per cycle 960 Minutes between cycles 480 MIN.
13. Materials used in process:

List of Raw Materials	Principal Use	Amount (lbs./hr.)
CERAMIC POWDER (LEAD OXIDE,	PRODUCT	350
TITANIA, ZIRCONIA REFRACTORY		
TOGETHER)		
BINDER	BINDER	7
WATER	MIXING MEDIUM	144
NATURAL GAS	FUEL	150,000 BTU/HR

14. PROCESS FLOW DIAGRAM MUST BE INCLUDED WITH THIS APPENDIX. Show entry and exit points of all raw materials, intermediate products, by-products and finished products. Label all materials including airborne contaminants and other waste materials. Label the process equipment and control equipment.

E-9

CONTROL EQUIPMENT

Control Equipment Code:

(A) Settling chamber
(B) Cyclone
(C) Multiple cyclone
(D) Electrostatic precipitator
(E) Fabric filter
(F) Spray chamber
(G) Cyclonic scrubber
(H) Impingement scrubber
(I) Orifice scrubber
(J) Venturi scrubber
(K) Plate or tray tower
(L) Packed tower
(M) Adsorber
(N) Condenser
(O) Afterburner - catalytic
(P) Afterburner - thermal
(Q) Other, describe

15. Control Equipment data:

Item	Primary Collector	Secondary Collector
(a) Type (See above code)	F	B
(b) Manufacturer	NICHOLS ENGINEERING	NICHOLS ENGINEERING
(c) Model No.	NERCO - NIRO 360	NERCO - NIRO
(d) Year installed	1959	1959
(e) Your identification	SPRAY DRYER CHAMBER	SPRAY DRYER CYCLONE
(f) Pollutant Controlled	CERAMIC POWDER	CERAMIC POWDER
(g) Controlled pollutant emission rate (if known)	NOT KNOWN	NOT KNOWN
(h) Pressure drop	-1/2 INCH WATER	7 INCH WATER
(i) Design efficiency	92 %	92 %
(j) Operating efficiency	NOT KNOWN	NOT KNOWN

STACK DATA

16. Your stack identification SPRAY DRYER STACK

17. Are other sources vented to this stack? ☐ Yes ☑ No
If yes, identify sources

18. Type: ☑ Round, top inside diameter dimension 12"
☐ Rectangular, top inside dimensions (L) x (W)

19. Height: Above roof 4 ft., above ground 36 ft.

20. Exit gas: Temp. 180 °F, Volume 5856 ACFM, Velocity 4300 ft./min.

21. Continuous monitoring equipment: ☐ Yes ☑ No
If yes, indicate: Type, Manufacturer
Make or Model, Pollutant(s) monitored

22. Emission data: Emissions from this source have been determined and such data is included with this appendix: ☐ Yes ☑ No
If yes, check method: ☐ Stack Test ☐ Emission factor ☐ Material balance

Completed by [illegible], Date 12/[illegible]/85

E-94
E-95

FOR OFFICIAL USE ONLY

Premise No. 13 / 18 / 03 / 1627
Source No. ___ / ___
Application No. ___ / ___

APPENDIX , PROCESS

PROCESS DATA

1. Name of process EVAPORATION OF WATER FROM CERAMIC-WATER SLURRY
2. End product of this process DRY CERAMIC PRESSING POWDER
3. Primary process equipment SPRAY DRYER

   Your identification SPRAY DRYER Year Installed 1959
4. Manufacturer NICHOLS ENGINEERING Make or model NERCO-NIRO 360
5. Capacity of equipment (lbs./hr): Rated 150 WATER Max. 160 WATER
6. Method of exhaust ventilation: ☑ Stack ☐ Window fan ☐ Roof vent ☐ Other, describe ___

   Are there multiple exhausts? ☐ Yes ☑ No

OPERATING DATA

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8. Percent annual production (finished units) by season:
   Winter 21 Spring 29 Summer 21 Fall 29
9. Hourly production rates (lbs.): Average 350 Maximum 400
10. Annual production (indicate units) 448000 LBS
    Projected percent annual increase in production 0
11. Type of operation: ☐ Continuous ☑ Batch
12. If batch, indicate: Minutes per cycle 960 Minutes between cycles 480 MIN.
13. Materials used in process:

List of Raw Materials	Principal Use	Amount (lbs./hr.)
CERAMIC POWDER (LEAD OXIDE,	PRODUCT	350
TITANIA, ZIRCONIA, REFRACTORY		
TOGETHER)		
BINDER	BINDER	7
WATER	MIXING MEDIUM	144
NATURAL GAS	FUEL	150,000 BTU/HR

14. PROCESS FLOW DIAGRAM MUST BE INCLUDED WITH THIS APPENDIX. Show entry and exit points of all raw materials, intermediate products, by-products and finished products. Label all materials including airborne contaminants and other waste materials. Label the process equipment and control equipment.

E-99
B-40

1318031627

Ohio Environmental Protection Agency

Application for a Permit or Variance to Operate

an Air Contaminant Source

VERNITRON Piezoelectric Div.	Casimer G. Stevens
Facility Name	Person to Contact
232 Forbes Road	232 Forbes Road
Facility Address	Mailing Address
Bedford Cuyahoga 44146	Bedford Ohio 44146
City County Zip	City State Zip
	216/232-8600
	Telephone Area Number

1. Complete and attach one of the following appendices most appropriate to the air contaminant source. Only one appendix may accompany this application.

   (Check one)
   - [x] Appendix A, Process
   - [ ] Appendix B, Fuel-Burning Equipment
   - [ ] Appendix C, Incinerator
   - [ ] Appendix D, Surface Coating or Printing Operation
   - [ ] Appendix E, Storage Tank or Loading Facility

2. Description of Source (same as used on appendix): Evaporation of water from ceramic-water slurry

3. Your Identification for Source (same as used on appendix): Spray Dryer

I, being the individual specified in Chapter EP-32 of the regulations of the Ohio Environmental Protection Agency, hereby apply for a (check only one):

X Permit to Operate (EP-32-02)

_____ Variance to Operate (EP-32-03)

for the air contaminant source described herein. The following additional documents are submitted as part of this application (describe all attachments):

O A Stevens

Signature of Officer or Owner*

Operations Mgr. VERNITRON Piezoelectric Div.

Title

December 29, 1975

Date

* As per Ohio EPA Regulation EP-32-02(B)(1) (Permit to Operate) or Regulation EP-32-03(B)(1) (Variance to Operate).

E-94

R-41

OhioEPA

State of Ohio Environmental Protection Agency

01

Permit to Operate an Air Contaminant Source
Terms and Conditions

Date of Issuance 08/07/75 Application Number 1318031627P001

Effective Date 08/15/75 Permit Fee 0

This document constitutes issuance to: VERNITRON PIEZOELECTRIC DIV.
232 FORBES ROAD
BEDFORD OHIO 44146

of a permit to operate:
CERAMIC FIRING TUNNEL KILN
C-1416 HICKLEY

The following terms and conditions are hereby expressly incorporated into this permit to operate:

Condition 1

The above described air contaminant source is now operating, and over the period covered by the permit will be operated, in full compliance with all applicable state and federal laws and regulations.

Condition 2

Prior to any physical change in, or change in the method of operation of, this air contaminant source which increases the amount of any air pollutant emitted, or results in the emission of any air pollutant not previously emitted, a permit to install must be granted by the Ohio Environmental Protection Agency (See Chapter EP-30 of the regulations).

Condition 3

The Director of the Ohio Environmental Protection Agency, or his authorized representative, may enter upon the premises of the source operation at any reasonable time and subject to safety requirements of the person in control of the premises for the purpose of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants and determining compliance with all applicable State and Federal air pollution laws and regulations and the terms and conditions of this permit.

Condition 4 (This condition applicable if checked: ☐)

Upon declaration of an Air Pollution Alert, Warning or Emergency Episode this air contaminant source will follow those emission reduction procedures enumerated in the Emergency Action Plan approved by the Director for this source.

Condition 5

This permit to operate shall be effective until 9/15/78. You will be contacted approximately four months prior to this date regarding the renewal of this permit. If you are not contacted, please write to this agency.

Condition 6

A permit fee in the amount specified above must be remitted within fifteen (15) days of the effective date of this permit.

Condition 7

The Director must be notified in writing prior to any transfer of a permit to operate. Such transfer shall not take place without the written permission of the Director.

Condition 8 (This condition is applicable if checked: ☐)

This permit is subject to the supplementary conditions attached.

OHIO ENVIRONMENTAL PROTECTION AGENCY

51.03

Mark C. Williams

E-94
D-42

CONTROL EQUIPMENT

Control Equipment Code:

(A) Settling chamber
(B) Cyclone
(C) Multiple cyclone
(D) Electrostatic precipitator
(E) Fabric filter
(F) Spray chamber
(G) Cyclonic scrubber
(H) Impingement scrubber
(I) Orifice scrubber
(J) Venturi scrubber
(K) Plate or tray tower
(L) Packed tower
(M) Adsorber
(N) Condenser
(O) Afterburner - catalytic
(P) Afterburner - thermal
(Q) Other, describe_____

15. Control Equipment data:

Item	Primary Collector	Secondary Collector
(a) Type (See above code)	F	B
(b) Manufacturer	NICHOLS ENGINEERING	NICHOLS ENGINEERING
(c) Model No.	NERCO - NICO 360	NERCO - NICO
(d) Year installed	1959	1959
(e) Your identification	SPRAY DRYER CHAMBER	SPRAY DRYER CYCLONE
(f) Pollutant Controlled	CERAMIC POWDER	CERAMIC POWDER
(g) Controlled pollutant emission rate (if known)	NOT KNOWN	NOT KNOWN
(h) Pressure drop	-1/2 INCH WATER	7 INCH WATER
(i) Design efficiency	92 %	92 %
(j) Operating efficiency	NOT KNOWN	NOT KNOWN

STACK DATA

16. Your stack identification SPRAY DRYER STACK

17. Are other sources vented to this stack? ☐ Yes ☑ No
If yes, identify sources_____

18. Type: ☑ Round, top inside diameter dimension 12"
☐ Rectangular, top inside dimensions (L)_____ x (W)_____

19. Height: Above roof 4 ft., above ground 36 ft.

20. Exit gas: Temp. 180 °F, Volume 5856 ACFM, Velocity 4800 ft./min.

21. Continuous monitoring equipment: ☐ Yes ☑ No
If yes, indicate: Type_____, Manufacturer_____
Make or Model_____, Pollutant(s) monitored_____

22. Emission data: Emissions from this source have been determined and such data is included with this appendix: ☐ Yes ☑ No
If yes, check method: ☐ Stack Test ☐ Emission factor ☐ Material balance

Completed by [illegible], Date 12/[illegible]/85

E-94

ATTACHMENT C

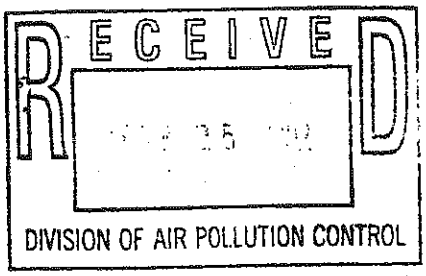
COPY OF JANUARY 28, 2002 PTI APPLICATION COVER LETTER TO MR. DAVID HEARNE OF THE CLEVELAND AIR POLLUTION CONTROL AGENCY

LABYRINTH MANAGEMENT GROUP
1684 MEDINA ROAD
SUITE 110
MEDINA, OHIO 44256
TELEPHONE: 330.239.4825
FAX: 330.239.9874

VIA CERTIFIED MAIL

January 28, 2002

Mr. David Hearne
Chief of Engineering
Department of Public Health
Bureau of Air Pollution Control
1925 St. Clair Avenue
Cleveland, OH 44114-2080



SUBJECT: PTI application for modification to an existing source (OEPA P001) for the Morgan Electro Ceramics, Inc. - Bedford, Ohio facility.
(Ohio EPA facility I.D. 1318031627)

Dear Mr. Hearne:

Morgan Electro Ceramics, Inc. (Morgan) respectfully submits the enclosed PTI application for modifications to the Spray Dryer contained in Morgan's Ohio EPA Emissions Unit ID P001, which was granted registration status in 1992. The original PTI application for this emission source contained a combination of mixers, a spray dryer and an electric kiln. The source was granted registration status on July 16, 1992.

The modifications to the source include adding a new exhaust fan, exhaust stack, high efficiency cyclone (primary control) and a pulse-jet type baghouse (secondary control) to the spray dryer operation. All other operations associated with this permit remain unchanged. Based on current operations at the facility, the spray dryer has a potential to emit of 17.02 lb/hr of particulate matter (PM) and 11.06 lb/hr of lead. Based on these levels the facility has a potential to emit of 74.5 tpy of PM and 48.5 tpy of lead. The facility currently employs a cyclone and wet-scrubber which is being replaced by the upgraded equipment discussed earlier.

Based on manufacturer's specifications, the new cyclone will achieve a control efficiency of >90% and the new baghouse will achieve a control efficiency of >99%. The control system will have an overall capture efficiency of 100%. Based on these conservative control efficiency estimates, the new control system will limit the potential emissions from the source to 0.017 lb/hr PM and 0.013 lb/hr lead. (0.07 and 0.06 tpy, respectively). The control system is interlocked into the spray drying process and the spray dryer cannot operate unless the baghouse fan is operating.

E-9P
C-2

Additionally, based on previously granted registration status, the source was permitted to emit up to 10 lb/day of an air contaminant, or 0.42 lb/hr (average). (OAC 3745-15-05 – "De minimis" air contaminant source exemption). Based on existing permissible emission limitations the source has no incremental increase in air (when air pollution control equipment is in place) and should therefore not have any air toxics modeling requirements.

Morgan anticipates that restrictions on the operation of the process, limiting emissions to levels below major source levels will be addressed in the permit to operate application, via a FESOP with specific restrictions.

Thank you for your consideration in this matter. If you have any questions regarding this correspondence, please contact me at (330) 239-4825.

Sincerely,
Labyrinth Management Group

K. Matthew Kupcak

Enclosure

cc: William Hocevar, Facility Engineering Manager, Morgan Electro Ceramics, Inc.

E-94
C-3

ATTACHMENT D

COPY OF APRIL 3, 2002, LETTER SUBMITTED BY MR. PURCHANSKI TO MORGAN ELECTRO CERAMICS

Department of Public Health
Division of Environment
Bureau of Air Pollution Control
1925 St. Clair Avenue
Cleveland, Ohio 44114-2080
216 664-2300 – FAX 216 664-4879

SERVING OHIO EPA
AS AGENCY 13 FOR
CUYAHOGA COUNTY

Wednesday, April 03, 2002

Morgan Electro Ceramics, Inc.
Attn: William J Hocevar
232 Forbes Road
Bedford, OH 44146-5476

RE: PTI application for P001, Nyro spray dryer, modification ("de minimis" exemption per OAC 3745-15-05)

Dear Mr. Hocevar :

Please find enclosed your application for an Ohio Permit-To-Install/Permit-To-Operate. After review, we have determined that this emission unit does not require State permits at this time in accordance with Ohio Administrative Code (OAC) Rule 3745-15-05. Please be aware that although this "de minimis" rule exempts the unit from permitting requirements, the owner/operator must retain records as described in paragraph (E) of the rule. In addition, we feel this project is not considered a "modification" based on the definition found in OAC Rule 3745-31-01 (VV) (1) (a) parts (ii) and (vi).

Please feel free to contact the engineer assigned to your facility, David Pruchenski at 216 – 664 – 3272, or the Chief of Engineering, David Hearne, at 216 – 664 - 2324 with further questions regarding your air permitting requirements.

Sincerely,

Uncontrolled ER: Pb 90.58 tpy
PM 139.36 tpy

David Pruchenski
Cleveland Bureau of Air Pollution Control

Enclosure
cc: OEPA / CBAPC file

E-97
D-2

ATTACHMENT E

2002 FACILITY EMISSION INVENTORY

Morgan Matroc, Inc. - Electro Ceramics Division
Bedford, Ohio Plant
Ohio EPA ID No. 13-18-03-1627
2002 Facility Air Emission Summary

Ohio EPA Emission Unit No.	Facility Source I.D.	Ohio EPA Emission Source Status	Calculation Method	Actual Operating Hours	Actual Annual Emissions				Potential Annual Emissions			
					VOC (tpy)	PM (tpy)	Pb (tpy)	HAP (tpy)	VOC (tpy)	PM (tpy)	Pb (tpy)	HAP (tpy)
P022	VPD-35	Non-insignificant	MB	864	0.00	0.41	0.00	0.00	0.00	0.61	0.00	0.00
P015	VPD-2	No Longer in Use	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P006	VPD-3	Insignificant	N/A	800	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P007	VPD-4	Insignificant	N/A	1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P008	VPD-5	Insignificant	N/A	1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P009	VPD-6	Non-insignificant	TD/MB	2000	N/A	N/A	N/A	0.38	N/A	N/A	N/A	1.65
P010	VPD-9	Insignificant	N/A	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P011	VPD-10	Non-insignificant	MB	320	0.64	0.16	0.00	0.00	17.52	0.00	0.00	0.00
P013	VPD-11	Insignificant	N/A	4000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P014	VPD-14	Insignificant	N/A	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P005	VPD-18	No Longer in Use	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P016	VPD-21	Insignificant	N/A	500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P017	VPD-22	Insignificant	N/A	2000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P018	VPD-23	Insignificant	N/A	2000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P020	VPD-26	Insignificant	N/A	2496	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P019	VPD-24	Non-insignificant	MB	2000	0.00	0.00	0.00	0.46	0.00	0.00	0.00	2.00
P021	VPD-33	Insignificant	N/A	4800	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P001	VPD-32	Insignificant	TD/MB	7200	0.00	0.19	0.09	0.09	0.00	0.23	0.11	0.11
P004	VPD-31	Insignificant	N/A	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
L001	VPD-34	Non-insignificant	MB	2000	0.00	0.00	0.00	0.99	0.00	0.00	0.00	4.36
FACILITY EMISSION TOTALS (tpy)					**0.64**	**0.75**	**0.09**	**1.91**	**17.52**	**0.84**	**0.11**	**8.10**

Note: All air emissions from sources considered "Insignificant" are specifically exempt from calculations to determine a facility's Title V applicability and meet the Ohio EPA De Minis exemption. "De Minimis" sources are exempt from obtaining a permit to install and operate as long as they meet minimum recordkeeping reqs.

Abbreviations:

PTE:	potential to emit	MB:	Material Balance	Perc:	perchloroethylene
VOC:	volatile organic compound	TD:	Stack Test Data	HAP:	hazardous air pollutant
PM:	particulate matter	AP-42:	AP-42 emission factor	N/A:	not applicable
Pb:	lead	tpy:	tons per year		

C-2
C-9

ATTACHMENT F

FEBRUARY 6, 1998 LETTER TO MR. ED FASKO WITH THE CLEVELAND AIR POLLUTION CONTROL AGENCY

Morgan Matroc, Inc.

Electro Ceramics Division

232 Forbes Road
Bedford Ohio 44146 USA
Telephone (216) 232 8600
FAX (216) 232 8731

MATROC
Leaders in ceramic technology

February 6, 1998

Mr. Ed Fasko
Chief Air Quality Engineer
Cleveland Air Pollution Control
1925 St. Clair Avenue
Cleveland, OH 44114

SUBJECT: Request for withdrawal of electronically submitted Title V Permit Application (Control No. 000003531) and designation of facility to non-Title V status for the Morgan Matroc, Inc., Bedford, Ohio facility

Dear Mr. Fasko:

On Friday, September 27, 1996, Morgan Matroc, Inc. electronically submitted a Title V Application (Control No. 000003531) for their Bedford, Ohio facility (Facility I.D. No. 13-18-03-1627). This submission was intended to serve as a complete facility Permit to Operate application requesting federally enforceable limitations on the facility's perchloroethylene usage. During the permit review process and subsequent requests for additional information from the state, Morgan Matroc, Inc. became aware of the fact that facility perchloroethylene usage had been reduced to the point that actual and potential emissions of perchloroethylene were below the applicable thresholds, therefore nullifying the requirement for a federally enforceable facility state operating permit.

Based on this information, Morgan Matroc, Inc. respectfully requests that this application submittal (Control No. 000003531) be removed from the STARShip database and all paperwork related to this application be returned to the following address:

Attn: William Hocevar
Morgan Matroc, Inc.
Electro Ceramics Division
232 Forbes Road
Bedford, Ohio 44146

not PTE

The Title V Permit applicability statement for this facility was based on production during the 1995 calendar year. At this time, the recordkeeping and documentation of perchloroethylene usage was not sufficient to conduct a thorough materials balance. Available records indicated the facility had actual annual emissions of 9.42 tpy (based upon 5,880 operating hours) and a potential to emit of 14.03 tpy (based upon 8,760 operating hours) of an individual hazardous air pollutant (perchloroethylene). The facility potential to emit for Total HAPs was well below the 25 tpy threshold (17.81 tpy).

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Based upon these results it was decided to submit a facility permit with federally enforceable limitations on perchloroethylene usage.

A revised permit to operate (PTO) was submitted to Cleveland Air Pollution Control Agency in February 1996 for Ohio EPA Source P019. The existing vapor degreaser was equipped with a new: (1) freeboard chiller, (2) refrigeration system, and (3) automatic cover. Additionally, improved operating and work practice standards for the vapor degreaser using perchloroethylene were implemented.

The engineering and operational changes resulted in actual annual emissions of 4.6 tpy and a potential to emit of 6.80 tpy of perchloroethylene for 1996 and an actual annual emissions of 4.9 tpy and a potential to emit of 7.3 tpy of perchloroethylene for 1997 (based upon 5,880 actual operating hours for both calendar years). (Please see attached tables for a summary of the 1996 and 1997 total facility actual and potential emissions calculations).

Based upon the reduction in actual and potential perchloroethylene usage at the facility, Morgan Matroc, Inc. believes that they are not at this time subject to the requirements of the Title V permitting program. (Please see attached Title V Applicability Questionnaire). Please advise Mr. William Hocevar if any further level of documentation is required.

Please forward this document to the appropriate personnel at the state level for due attention. Thank you for your consideration in this matter. If you have any questions regarding this correspondence, please contact Mr. William Hocevar at (216) 232-8600.

Sincerely,

Ronald Roch
President
Morgan Matroc, Inc.

cc: W. Hocevar
D. Mehls

Attachments

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ATTACHMENT G

FEBRUARY 18, 1998 LETTER TO MORGAN ELECTRO CERAMICS FROM MS. JANE BELL, CLEVELAND AIR POLLUTION CONTROL AGENCY

City of Cleveland
Michael R. White, Mayor

Department of Public Health
Division of the Environment
1925 St. Clair Avenue
Cleveland, Ohio 44114-2080
216/664-2300

February 18, 1998

Attn: William Hocevar
Morgan Matroc, Inc.
Electro Ceramics Division
232 Forbes Road
Bedford, Ohio 44146

re: February 6, 1998 letter to Cleveland APC regarding Morgan Matroc's Title V and FESOP applicability

Dear Mr. Hocevar:

Based on the information submitted to us regarding your emissions and your Title V/ FESOP applicability, we are taking the necessary steps to withdraw your application from our system. A copy of the information has been forwarded to Columbus (OEPA) for their review and records. The appropriate personnel in Columbus will then withdraw the information from the system.

You will be required to submit State Permit To Operate (PTO) applications. A blank copy of a PTO application and an EAC form is enclosed. Please make the necessary copies to complete for your emissions units. If you should have any questions regarding this matter please feel free to contact me at 216-664-4258.

Sincerely,

Jane M. Bell

Jane M. Bell
APC Engineer

cc: OEPA file #13-18-03-1627
L. Ours
M. VanMatre

Enclosure

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ATTACHMENT H

LIST OF ALL AIR POLLUTION CONTROL EQUIPMENT ASSOCIATED WITH P001

Pollution Control Equipment Associated with P001

1	Control Equipment:	Wet Scrubber
	Maufacturer:	Ducon Technologies
	Model:	Ducon Multivane Scrubber Size: 60 Type: L
	Pollutants Controlled:	PM, Lead

2	Control Equipment:	Cyclone
	Maufacturer:	Sly, Inc
	Model:	Model T2
	Pollutants Controlled:	PM, Lead

3	Control Equipment:	Baghouse
	Maufacturer:	Sly, Inc.
	Model:	Model STJ-66-8 TubeJet Insulated Dust Collector
	Pollutants Controlled:	PM, Lead

DUCON TECHNOLOGIES INC.
19 ENGINEERS LANE
FARMINGDALE, NEW YORK 11735
TEL: (516) 694-1700
FAX: (516) 420-4985

INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS FOR MULTIVANE SCRUBBER

NUMBER OF UNITS: One (1) SIZE: 60

CUSTOMER NAME: Morgan Electro Ceramics

CUSTOMER ORDER NUMBER: P004630

DUCON CONTRACT NUMBER: C03-2803

DATE: 6/18/03

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CONTRACT NO. C03-2803

DESIGN DATA:

EQUIPMENT: MULTIVANE

NUMBER OF UNITS REQUIRED: One (1)

UNIT APPLICATION: Lead Oxide Scrubber

PLANT ELEVATION: --

INLET GAS FLOW: 12,000 ACFM, TEMP. 70 ° F

HUMIDITY: .0063 % MOISTURE BY VOLUME

INLET GAS DENSITY: 0.0756 LBS./CU. FT.

OUTLET GAS FLOW: 11,915 ACFM, TEMP. 56° F

OUTLET DENSITY: 0.0748 LBS./CU. FT.

SCRUBBING LIQUID RATE: 30 GPM @ 3 to 5 PSIG

PRESSURE DROP: 6.0 in WG.

EVAPORATIVE LOSS: --- GPM

REFERENCE DRAWINGS:

UNIT ASSEMBLY DRAWING NUMBER: DC03-2803-01

ATTACHEMENT I

RAW MATERIAL USAGE FOR P001 FOR CALENDAR YEAR 2002

Morgan Elecro Ceramics Raw Material Usage for P001 - 2002

	Q1	Q2	Q3	Q4	TOTAL	
PbO	8425.9	8852.8	6210.5	8222.4	**31711.7**	
Pb_3O_4	2860.5	3005.4	2108.5	2791.4	**10765.6**	
ZrO_2	3458.8	3634	2549.4	3375.2	**13017.4**	
TiO_2	1995.1	2096.2	1470.6	1947	**7508.9**	
SnO_2	0.3	0.3	0.2	0.3	**1.2**	
$SrCO_3$	416.7	437.8	307.1	406.6	**1568.2**	
BaC_2O_3	61.9	65.1	45.6	60.4	**233**	
La_2O_3	31.5	33	23.2	30.7	**118.4**	
Nb_2O_5	16.9	17.8	12.5	16.5	**63.6**	
Ta_2O_5	0	0	0	0	**0**	
Sb_2O_3	10	10.5	7.3	9.7	**37.5**	
Fe_2O_3	27.5	2839	20.3	26.8	**103.5**	
NiO	1.4	1.5	1.1	1.4	**5.4**	
UO_2	2.6	2.7	1.9	2.5	**9.6**	
TOTALS	17309	18186	12758	16891	**65,144**	**Pounds**

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ATTACHMENT J

FACILITY FLOW DIAGRAM